Designing Change in a Higher Education Institution

Heather Madden

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Director of Studies: Professor Andrew Walters

Second Supervisor: Dr Taslima Begum

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Cardiff School of Management

Cardiff Metropolitan University

Western Avenue

Cardiff, UK, CF5 2YB

Declaration

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Date: 22nd November 2017

Statement One

This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used, the extent and nature of the correction is clearly marked in a footnote(s). Other sources are acknowledged by footnotes giving explicit reference. A bibliography is appended.

Date: 22nd November 2017

Statement Two

I hereby give consent for my thesis, if accepted, to be available for photocopying and for inter-library loans after expiry of a bar on access approved by Cardiff Metropolitan.

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Glossary of Terms and Tools[1]

Action Plan	A detailed plan, outlining actions to achieve one or more outcomes, of a new prototype or service.
As-is	The state that something is in at the present time, for example, an as-is process is the current state of the business process in an organisation.
Back Stage	In a *Service Blueprint*, the back stage is where all the support process and systems sit, separated from the front-stage by a line of visibility.
Brainstorming	A creative approach to come up with lots of thoughts and ideas, usually to solve a problem.
Bright Spot	Things that an organisation is doing really well to help meet their customers' goals.
Car Park	A large sheet of paper hung on the wall during a workshop where items can be parked for later discussion.
Co-Creation	Can refer to any action of combined creativity, i.e. creativity that is shared by two or more people.
Co-Design	An instance of co-creation that refers to the collective creativity of designers and non-designers, working together in the practice of design (Sanders and Stappers, 2008).
Cognitive Walkthrough	A usability assessment tool in which one or more evaluators perform a series of tasks and ask the end user a set of questions.
Contextual Interviews	An ethnographic technique to interview, observe and examine the various stakeholders in their environment.
Customer Experience Map	A map used to capture customer interactions and behaviours, including bright spots and hot spots.
Customer Journey Map	A diagram that represents the whole interaction of the customer with the service, including thoughts, feelings and emotions.

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[1] More information about these tools can be found at:
- http://www.servicedesigntools.org/
- http://www.servicedesigntoolkit.org/
- http://www.edwarddebonofoundation.com/

FaceMooc	A five-week online course for design professionals interested in co-design hosted by Imagination Lancaster at Lancaster University, in 2014.
Fail Point	Any point within the service encounter that has the potential to affect customer experience.
Fishbone Diagram	A tool to identify all possible causes for an effect or problem.
Five W's and Five Why's	A tool used to explore an idea, problem or a theme.
Framing: Research Questions	A tool to identify insights and define the existing problem.
Front Stage	In a Service Blueprint, the front stage refers to the parts of the service that are visible to the user or customer.
Hot Spot	A hot spot is an area with high importance and low satisfaction.
I Wish..... (What If....)	A tool to pose questions to users and providers of a service to test future scenarios.
Ideation: Idea Selection	A tool used to determine which ideas generate the highest potential for impact.
Ideation: Lotus Blossom	A tool used to demonstrate how to flesh out important design requirements and the characteristics of those requirements.
Issue Card	A tool where each point on a card could contain an insight, a drawing or a description of a scenario.
Mind-map	A tool for mapping thoughts, problems and ideas and their connections.
myCIT	www.mycit.ie is CIT's student portal and all new students receive a myCIT email address.
Observation	A tool to observe users or customers interacting with a service or product.
Personas	A tool used to create a fictional character that represents a typical user or customer.
Positive Minus Interesting (PMI)	A thinking technique to find the Positive, Minus and Interesting points about a particular situation or problem. It is very useful to capture input or feedback from a large group, in a structured way. It gives all participants a voice and keeps the agenda moving, without getting stuck in one particular area.
Service Blueprint	A map that describes the quality and nature of the service interface, between the user and the touchpoints of the service.
Service Concept: User Journeys	A tool used to map the current service.
Service Prototypes	A tool to simulate a real-world service experience.
Shadowing	A research tool to observe front-line staff or customers, in their day-to-day environment.
Smart Card	The CIT Smart Card is an identity card with a contact-less chip built into it, used to gain access to key services and act as a personal electronic purse.

SPIDER	SPIDER was a European project about Service Design that ended in 2015.
Storyboard	A storyboard is a representation of a service and its use cases using a series of drawings and pictures.
Swim-Lane	A flow chart that documents the steps and activities across lanes, which can depict functions or departments.
System Map	A map of the various actors and flows of data and materials through a system.
To-be	The state that something will be in the future, for example, a to-be process represents the future state of the business process within the organisation.
Touchpoint	A touchpoint is a contact point with one or more elements of a service offering, for example, receiving a confirmation letter.
User Stories	A tool used to gather stories about the experience of existing users, in order to draw out valuable insights that could then be used to develop a better experience for new users.
Wait Point	A point where the waiting time is likely to exceed average or minimum tolerable expectations.
Wall of Pain	A large blank wall that can be used to post pain-points during a workshop and categorise them from low to high.
War Room	A War Room, in this case, was a temporary physical space that provided a canvas to capture issues, ideas and opportunities for the next cycle of delivery. Those involved in delivering the service could co-locate to visually collaborate and problem solve for short 20 minute sprints.

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I would like to thank my parents for their constant backing and support. They imparted the value of education, which has opened doors to lots of opportunities, throughout my academic and professional endeavours. I would also like to thank my mother for proof-reading this thesis and offering advice along the way.

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Abstract

The **silo effect** in **higher education institutions** refers to the rigid reporting structures and decentralisation, which have become barriers to providing staff and students with essential information and services. Changing the processes and procedures that support the **delivery of student services** in higher education would result in improving the experience for everyone, for example, reducing the time spent transferring their calls or making them visit several campus buildings to resolve a query. Connecting **cross-functional teams** to define problems and design solutions, has proved challenging because of the time-restricted academic calendar and its cycles of demanding administrative processing.

This thesis joins a minimal but vibrant conversation on the use of **Service Design tools and techniques,** to improve the student and staff experience at a higher education institution in Cork, Ireland. Service Design can help to conquer the political and cultural divides in higher education institutions and reshape a traditional organisation, into an innovative, proactive, efficient and user-centred one.

This research began in March 2013, using a **practice-based action research** approach to deliver **organisational change**. Seven action research cycles, implemented over four years, assessed how a **Design Thinking** methodology could be used to analyse and improve services at each stage of the Student Lifecycle and embed this approach as a long-term sustainable change enabler. Each **cycle of action** improved some practice, implemented prototypes and adopted new ideas. The combination of knowledge generated from all cycle's, presents important questions and delivers valuable lessons, on how to introduce Design Thinking into a higher education institution.

Although Service Design can help organisations to design and implement new kinds of value across many sectors, the transition to using its tools and approaches can be difficult. Removing the initial barriers by reducing unfamiliar terminology and using an appropriate toolset, allows Service Design to be placed in the context of the organisation. Involvement of staff at all levels, from management to front-line, ensures that the service is understood in its entirety, and the support is there to

implement true change, in a collaborative way. In the short term**, quick-wins** provide incentives to continue on the change journey, while long term evaluation provides feedback on improvements, highlighting those service elements that still require change.

Foreword

The Irish Higher Education Sector

For a variety of reasons, Irish higher education is now at a point of transition; the number of people entering the system is growing and the profile of students is changing. There are currently seven universities and 14 institutes of technology in the Republic of Ireland. Student numbers at publicly funded universities, institutes and colleges totalled 225,628 in 2016/17. To support this there are now over 24,000 staff employed across higher education institutions.

After eight years of spending cuts and increasing student numbers, higher education institutions are approaching crisis point. Despite the strong case for higher education services, institutions have seen a significant drop in investment in the past decade; 30% per student in the institutes of technology and approximately 14% per student in universities. Third level institutions have tried to bridge the gap in numerous ways, one university hit the headlines recently when students protested at the introduction of a €450 examination resit fee. Students are being squeezed again and again, and at the same time, institutions are struggling to deliver services under current funding models.

There have been two significant reports produced in Ireland in the last decade. The "National Strategy for Higher Education to 2030" (also known as the Hunt Report) and the Cassells report, "Investing in National Ambition: A Strategy for Funding Higher Education", both explore critical issues in Ireland's higher education sector.

The Hunt Report proposed using merger as a tool to address problems of capacity, performance and fragmentation by restructuring the sector, merging institutes and creating technological universities. On 24th January 2018, as final changes were being made to this thesis, the Technological Universities Bill (which will unite the institutes of technology into four technological universities) was passed by the Irish parliament for approval. The legislation will reinforce the growth of a new type of higher education institution, building on the assets and duty of institutes of technology, resulting in world class technological universities. A new change approach is required to transform these institutions into student-centred efficient universities.

The Cassells report emerged from an expert group that was established, to explore future funding requirements for higher education, and to pose options for a sustainable funding model for the sector. Three options were outlined in the report: a mainly state-funded system, increased state-funding with student fees remaining, and thirdly, increased state-funding alongside income-contingent student loans.

University presidents expressed an inclination towards income-contingent loans for students, but the institute presidents, however, warned of the dangers of such an approach and the impact this would have on participation rates, especially among the non-traditional students. The Union of Students in Ireland (USI) have organised several demonstrations opposing the student loan scheme.

In 2016, two significant political developments occurred which create ambiguity, and opportunity, for Ireland. The uncertainty that Brexit has created for higher education in the UK, could create significant opportunities to attract world-leading scholars and researchers for the Irish higher education system. However, the government will need to move quickly and create the necessary conditions in order to benefit from these likely opportunities. The political changes in the US mean that our quality education and training, research and innovation, will now more than ever be hugely important for attracting foreign direct investment.

Service Design for Higher Education

As most higher education institutions are currently struggling with existing financial supports, it is imperative to have the ability to deliver better services with less resources. Up until now, services have generally been developed by the administrators that deliver them, with little input from students or staff in the design process. Continuous improvement is proving to be challenging for institutions as staff struggle to keep the lights on and deliver existing services. Student experience is a topic that has emerged in recent years with many institutions now focused on student retention, engagement and satisfaction. Student experience is not just about academic experience but a holistic view of everything a student encounters across academic, social, administrative and support functions.

As such, the introduction of a human-centred approach to designing and delivering services for students and staff can have a positive impact on higher education service delivery. Many institutions already employ students as ambassadors and student

leaders for various purposes, so why not take the next step and involve students in co-designing the services that they use daily? Design Thinking will allow institutions to move away from being reactive and inward-looking, by means of user-centred design tools and techniques to drive innovation, quality and productivity and remove the silos of service delivery.

Thesis Structure

This thesis is a part of a Professional Doctorate programme and the degree of Doctor is awarded in recognition of the successful completion of the approved taught modules. Although the thesis is a chronological document and a combination of taught modules and individual practice, the action research and reflective practice happened throughout the entire journey.

Module No.	Assessment type	Assessed by
DOC7001	Essay and reflective presentation	Supervisory team
DOC8002	Literature review and reflective presentation	Supervisory team
DOC8003	Methodology essay Pilot project report Reflective presentation	Supervisory team
DOC8004	Final project report and reflective essay	Viva team: internal and external examiner

Part One | DOC701 | Contextualising Professional Change

Chapter One | Introduction

1.1 Introduction

The higher education sector needs to deliver more useful, usable, efficient and student-centred services. There is a deficit in consideration of a more holistic approach to the actual Student Lifecycle and the supporting of same. The current complexity of the processes is tedious for all involved, in particular, front-line staff and students, and there is a lack of cross-functional communication. There is a need to understand the service, before introducing improvements into the service.

Students come into contact with a number of *touchpoints*[2] that represent the shop window for numerous processes and systems that struggle to support services for 12,000 students and 1,400 staff in a higher education institute. Staff are overwhelmed by the symptoms of inefficient processes, and administration takes a lot of time and energy, leaving little room for innovation or improvement.

Design Thinking can play a pivotal role in how higher education institutions behave and function. It can provide a structure to assess and improve existing processes and services, develop new services and enable conversations, ideas and change. "Square wheels" as demonstrated in Figure 1, are everywhere in organisations, not just higher education, and the attitude of "we've always done it this way"[3] is customary. When presented with "square wheel" situations, Design Thinking can help people to self-identify their own problems. It enables them towards understanding user needs to deliver value, functionality and round wheels!

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[2] A touchpoint is a contact point with one or more elements of a service offering, for example, receiving a confirmation letter.
[3] The phrase "we've always done it this way" is thought to have emerged from Grace Murray Hopper, a pioneering computer scientist who was interviewed for an article in "Computerworld" in 1976 when discussing the future of data processing.
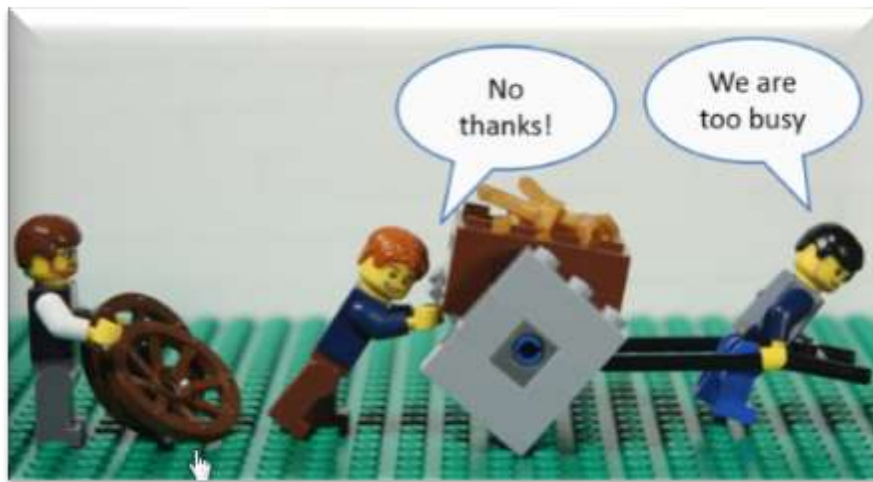
Figure 1: Pushing the square wheel (Forss, 2014)

An example of a "square wheel" is shown in Figure 2, where a sign on the door of a busy department during the first week of term highlights the need for change. A number of assumptions can be made about the scenario but the obvious one is that the person behind the door is inundated with visitors, phone calls and emails, caused by inefficient processes, supporting neither staff nor student. The reality is that academic institutions need to change old habits and norms, break down silos and become problem-focused, all for the greater good of student and staff experience.
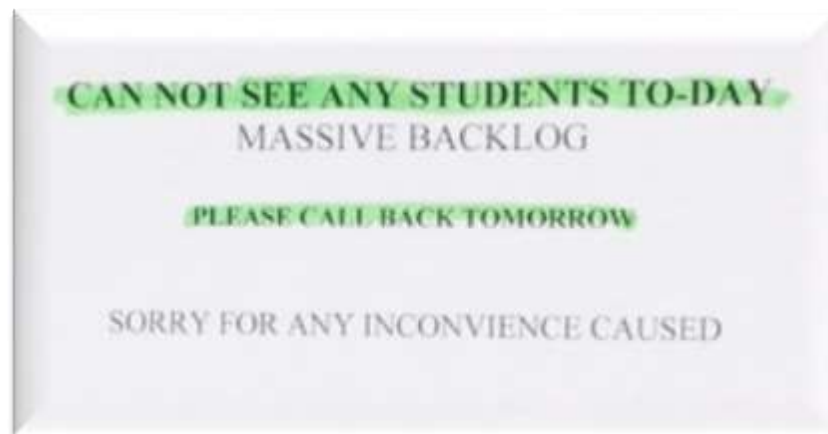
Figure 2: Sign on the door of an administrative office on 17th September 2014

1.2 Background and Context
Cork Institute of Technology (CIT), is a publicly funded higher education provider. It is the largest of Ireland's network of thirteen Institutes of Technology and currently has in the region of 12,000 registered students with approximately 2,000 new entries year

on year. CIT's education, research and training provision spans a wide variety of disciplines, from business and humanities through engineering and science to music, drama, art and design. CIT's people are its most important resource and includes students, staff and alumni, in addition to the many contributors to the organisation; guest lecturers, examiners, researchers, authors, seminar speakers and industry collaborators.

At CIT, each stage of the Student Lifecycle, from prospect to alumni, is treated as distinct separate interactions and the flow of the student and their experience through the lifecycle, has not been considered from a service point of view, until now. Each department works to provide a service to students, at a particular point in time, without considering the overall "customer" experience. This research proposes to discover how Design Thinking can be used, to design better services for CIT's stakeholders, in a more coherent way. The focus needs to shift to removing complexity and uncertainty from existing processes. CIT needs new ideas and a fresh approach, where previous attempts to redesign services have failed.

A simple example, of how this complexity impacts both students and staff, is the process of sending login details to new students, containing important information such as their student ID, email address and password. Previously, a letter was posted to students' home address, when they had often already left home and moved into student accommodation. Prompted by his fellow students, one particular student arrived to the Admissions front desk, enquiring about the "login letter" he had not received. After a number of visits between the Admissions Office, the IT helpdesk and his own academic department, he could not get what he needed. Frustration was felt, not only by the student, but the staff trying to help with his query. Eventually it was discovered that the office responsible for sending the letters, was able to reprint one for the student.

While it is obvious that staff were unclear about the process of sending login details to new students, which resulted in the problem being passed around, it is the human interaction that led to misinformation. By analysing this problem from the students' perspective as part of cycle one, the RECAP project, a number of simple improvements were accomplished. The login letter became a login email and a number of staff working in front-line services, were granted access to check and

resend details to students, if necessary. Not only did these changes remove needless administrative overheads for staff, but it improved the on-boarding experience for all new students. Embracing co-design[4] builds trust and collaboration across departments and increases the chances of constructive, dynamic, creative participation, leading to excellent outcomes.

The motivation for this Professional Doctorate is to implement solutions, which focus on user needs and experience, while involving all stakeholders in the co-design process. Design Thinking can help organisations to innovate on a daily basis, enabling staff to think outside the box and become more creative in solving small and large problems (Liedtka, 2010; Lockwood et al., 2012). The crux of this research, is to discover how to embed a new way of thinking, while potentially meeting resistance, uncovering the reasons for this resistance and encouraging people to collaborate towards a better student experience.

With any change project, achievable short-term targets need to be set, and once accomplished, will motivate people to persist and keep trying. Many authors agree that the short-term wins are important to create momentum and celebration (Hammer and Champy, 2003; Kanter, 2013; Kotter, 1995). It is this celebration that creates buy-in for future change projects. At institutes like CIT, it is important to consider current work habits and the culture of "we've always done it this way". A change agent can successfully influence individuals and groups by encouraging them to challenge the status quo. At CIT, it's not just enough to include staff in co-creation[4] and design workshops, they need to understand what the change is about, how it will affect their jobs and how it can improve the student experience.

1.3 Action Research

Qualitative research is highly contextual, as the data is collected in a particular setting or relating to a particular set of circumstances, often over long periods of time. Gray (2009) highlights that it goes beyond providing a mere snapshot or cross-section of events and can show how and why things happen. Qualitative research is a holistic

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[4] Co-creation can refer to any action of combined creativity, i.e. creativity that is shared by two or more people. Co-design is an instance of co-creation, which refers to the collective creativity of designers and non-designers, working together in the practice of design (Sanders and Stappers, 2008).

and creative process, which will be developed through the researcher's own practice. Service Design tools and methods are well aligned with qualitative research as they require intense contact within a real-life setting.

The nature of research enquiry is exploratory, descriptive or explanatory (Figure 3), or a combination of the three and this is determined by the type of research question. Exploratory research is when the researcher has an idea and seeks to understand more about it. It can involve taking a new angle to look at something. It is mostly used where the problem is not clearly defined. Descriptive research requires the researcher to provide additional information about a topic and describes the topic in more detail. Explanatory research is about making links or connections between variables.

Exploratory[a]	Descriptive	Explanatory
Seeks to investigate an underresearched aspect of social life	Seeks to richly describe an aspect of social life	Seeks to explain an aspect of social life

Figure 3: Research Purposes (Hesse-Biber and Leavy, 2010)

This is an exploratory piece of research, as it seeks to identify a problem, simplify the nature of it, look for insights and develop a better understanding of the issue. On the journey towards a Professional Doctorate, this research focuses on implementing valuable change, and a gap will be filled by addressing the following research question: to assess how Design Thinking can be used as an approach to analyse and improve services at each stage of the Student Lifecycle and embed this approach as a long-term sustainable change enabler in the higher education service system.

As the author is interested in analysing people's views, mind-sets and behaviours then a qualitative approach is most suited. Qualitative research tends to be subjective in nature and involves social researchers that are located in a subjective context; this research is collaborative rather than subjective, as the author is jointly focused on fostering change, with people across the institution.

1.4 The Author's Role

As a practitioner of business analysis, the author has helped to facilitate change in a number of organisations. Her experience has shown that people fear change and some stakeholders resist change, based on these fears. The author realises that a new approach is necessary, in an organisation where people and culture are the most influential aspects of whether projects are successful or not. The author's academic background in Graphic Design and Computing, has resulted in a unique combination of creative and problem-solving skills and a Business Analyst eager to empower change through design. On the many change projects the author has led, a traditional analysis approach was employed. Requirements were gathered and analysed but the focus on co-design did not exist. The authors current role has evolved into one focused on identifying, researching and pursuing process improvements, across the Institute, with a focus on digital transformation. Facilitating discussions and workshops, in order to generate ideas and identify opportunities, is a key step in enhancing the experience for both staff and students, whilst aligning people, process and technology. Her approach is practical and logical and aims to champion ongoing development of and refinement of processes across the institute, by developing and coaching a standard set of tools, techniques and methods. Design Thinking allows her to understand the needs of the user, with a new lens.

1.5 The Organisation's Role

Cultivating an environment of creativity and innovation is a necessary part of this research. The culture of the organisation needs to be nurtured into one that questions why things are done a certain way and contests inefficient processes. Martin (2009) suggests that rather than rewarding employees based on reliability, they should be rewarded for being innovative and more importantly, rewarded for failing when trying out new ideas.

Action research is a form of organisational learning, as it is a process of problem-solving that can help a group of employees, to improve what they are doing or appreciate it in new ways (Patton, 2014). It is the ambition of this research, for people to participate in an action research cycle and learn to question what they are doing, why they are doing it and think more systematically about the policies, processes and

procedures that impact them. New knowledge is created when employees continually develop themselves, which creates a learning organisation.

Action learning allows participants to take what they have learned back to their work situation and translate the learning into action. This research is focused on educating and informing employees about new tools and methods in the hope that they will use this new knowledge to look at all aspects of their work within the organisation. It will enable them to innovate and change "how we do things around here"[5]. Organisational learning can be described as the bridge between working and innovating (Brown and Duguid, 1991). A learning organisation is one that continually facilitates the learning of its employees, is focused on action and seeks to understand the internal and external situations that affect the creativity and innovation needed to improve their products or services.

1.6 The Research Gap

A great deal of knowledge was gained throughout this research while attending seminars and conferences and engaging in online discussion forums. Many university change teams exist worldwide and are working on a diverse range of projects, training people in new tools and techniques, coaching and mentoring staff and creating communities of practice across their institutions. University of Nottingham's Project Transform, University of Strathclyde's Process Improvement Unit and University of Alberta's Future Technology Map all aim to offer a joined-up series of services to staff and students by building internal capacity for continuous improvement. The knowledge gained illuminated the need for a transformational approach to change across the higher education sector; figuring out the strategic priorities and focusing on solutions to support them.

Very little is known about a Design Thinking approach and the use of Service Design tools and techniques to foster creativity among existing staff members and teams with the objective of a streamlined student experience. Design Thinking can enable CIT to examine the underlying causes of existing process bottlenecks which include poor communication, misinformation and information silos, and resolve recurrent

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[5] The term "how we do things around here" is often used to refer to the existing organisational culture and the classic phrase was invented by the McKinsey Corporation.

issues in a more innovative way. This indicates a need to investigate if some of the more traditional barriers to change such as top-down support, complex processes and risk aversion can be surmounted using a design-based approach. A number of steps can be made towards improving the student experience which will lead to incremental change over a number of years. CIT staff and students can orchestrate and co-create these changes using some design-led guidance and coaching.

1.7 Developing Reflective Practice

The process of reflective practice seeks to enable insights and support, learning from past experience, to improve the present and future situations. Rather than being a structured, prescribed activity, it is a creative and active process that requires us to think, feel, read, question, talk, watch and ask ourselves and those around us about what we are doing and why (Thompson, 2009). Thompson's model of systematic practice is focused around three key questions and was used by the author to undertake "reflection-for-action" as a step towards developing the research aims and objectives (Thompson and Thompson, 2008).

1. What are you trying to achieve?
    o The author is starting to identify the key aims and goals of her research.
2. How are you going to achieve it?
    o Each box in the second tier will contribute to the achievement of that aim.
3. How will you know when you have achieved it?
    o This is the third and fourth tier in the diagram and ensures that the goals are achievable.

In Figure 4, the author uses the first two questions as a basis to clarify and plan what she would do and how she would do it during the early cycles of action. Question three focuses on how those objectives would be fulfilled.

	To discover how Design Thinking can be used as an approach to improve services at each stage of the student lifecycle					
What are you trying to achieve?	Co-creation projects and workshops	Introduce Service Design tools and techniques	Empower stakeholders with Design Thinking skills	Improve communication across silos for staff and students	Deliver small innovations through cycles of action	Creation of a Student Lifecycle as a blueprint for refining processes
How will you achieve it?	Staff have a better understanding of their role in the process	Changing mind-set which will lead to employees motivated to come up with ideas for innovation	Evidence gathered on the positive impact of change and innovation	Focus on "customer" experience rather than silos of service delivery	Creation of prototypes and implementation of ideas, refine for next cycle, iterate	Clear path and strategy on how to improve the student experience
How will you know when you have achieved it?	More collaboration on new projects across multiple departments	Employees no longer do something because "we've always done it this way"	Staff develop more empathy for the student experience	Decreased calls and emails to key services from students & staff	Positive feedback and demand from staff to deliver change and start on the next project phase	Improved student experience based on more efficient services

Figure 4: Objectives Tree (adapted from Thompson and Thompson, 2008)

1.8 Research Aims and Objectives

The objectives explain how the research question will be answered but also indicate the steps involved and the variables to be measured. The objectives address the long-term research outcomes and reflect the aspirations and expectations of the research topic:

1. To undertake a critical review of relevant literature on the use of Design Thinking to influence iterative organisational change within higher education and the public sector.

2. To implement a number of small change projects using Service Design tools and techniques, and improve student and staff experience at CIT.

3. To empower employees with Design Thinking skills.

4. To develop a process and service improvement plan based around the Student Lifecycle.

5. To identify the conditions for change and create a link between these conditions and measures of success.

6. To establish a design hub to train, support and mentor staff, students and external stakeholders in user-centred design methodologies, tools and techniques.

1.9 Operationalising the Objectives

A key element of any research is to turn abstract concepts into recognisable measurable chunks. In order to ensure consistency across each action research cycle as data was collected and analysed, it was important to develop a set of measurements. The outcomes from a Design Thinking process are not easily measurable and it is difficult to define variables into quantifiable factors. In pursuit of identifying when Design Thinking may be a step closer to becoming embedded in an organisation, a number of measures can be used. Delivering measurable outputs in the form of *Service Prototypes*[6] in addition to more intangible measures like an increase in collaboration or improved student experience were important. The outputs

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[6] A Service Prototype is a tool to simulate a real-world service experience.

from each action research cycle will try to achieve either one or more of the following indicators of success:

1.9.1 Qualitative Measures

- Designing new *touchpoints*, co-ordinating existing *touchpoints* and extending *touchpoints* to more students

- Adoption of Service Design tools by a number of staff in CIT

- Increased empathy for students and their experience

- Placing students at the centre of service improvements

- Instilling a culture of inquiry and curiosity; questioning why we do things a certain way

- Developing *Service Prototypes*, for example, online 'how-to' videos and pop-up helpdesks

- Enhancing participation in creative and innovative workshops

- Focusing conversations around process improvement

- Eliminating non-value-added steps across several areas

- Better understanding of front-line services by the staff that are delivering various aspects of the service

1.9.2 Quantitative Measures

- Number of new projects initiated, using a Service Design approach, to improve the student and staff experience

- Number of people that participated in Service Design workshops

- Number of ideas created in a single workshop and across all workshops

- Number of *Service Prototypes* developed

- Reduction in materials and waste, for example, printing of bank giros, posting of login letters, printing of student handbooks

- Number of people affected by each of the action research cycles

- Number of students receiving a registration, induction, and orientation experience

- Number of service improvements

As Service Design is a new approach, the next step is to ensure that the changes implemented become "how we do things around here" rather than once-off projects. It is important to embed Design Thinking into the organisation but this cannot happen overnight and will take some time. If one performs a task over and again, it does not mean that they are performing it correctly. The people performing daily administrative tasks need to take a step back and look at why things are done the way they are in CIT and question existing procedures.

Success would result in a more detailed understanding of customer needs along with an understanding of the barriers and incentives to satisfying students' needs. At CIT, the impact of Design Thinking and Service Design needs to be measured in stages. The challenge will be to develop a set of measurements around something that is soft and amorphous. This change programme aims to deliver better enhanced services that offer value to the users who engage with the service, not necessarily quantifiable in numbers.

1.10 Thesis Layout

This introductory chapter outlined the background and motivation for the research along with an overview of how and why change will be implemented.

Chapter two presents a review of the literature across a number of key areas. It identifies organisational change and culture as two important topics to review as background reading. It then delves into the literature on Service Design and Design Thinking to discover how they can be used to influence change in a higher education environment.

Chapter three addresses all things methodological and describes the design and implementation of the research. The choice of research methodology, the research design, ontological and epistemological viewpoints and the methods used to achieve the research objectives are all presented. It summarises the research journey and presents an overview of the seven cycles of action research including the objectives, outputs and learning from each cycle. The methodological limitations and ethical considerations are also discussed.

Chapter four explores the pilot project, RECAP, the data gathered, actions taken and the limitations and challenges that arose during the project. At the end of this six month pilot project, the change was critically examined and the reflections all informed and refined the research design.

Chapter's five to ten give an account of the remaining six cycles of action, and are structured in a uniform way to show the rigor that went into this research project and the change that came about as a result. This allowed the author to compare and contrast the inputs and outputs from each cycle, examine the relationship between them and the implications of one cycle on the next.

Four broad themes emerged from the analysis and these are discussed in chapter eleven and finally chapter twelve answers the research questions, discusses the contributions to knowledge and practice and the limitations of the research in conjunction with some final recommendations for future work.

Part Two | DOC702 | Literature Review

Chapter Two | Literature Review

2.1 Introduction: What is design and why is it Important?

Design is a major factor in contributing to the transformation of products and services for all types of organisations. It allows companies to become more competitive and innovative and to deliver value to their customers. Design-led innovation can make public services more efficient and effective and at the same time deliver faster, clearer services that the public actually want. Design can help to change employee behaviour and solve practical problems by shaping the customer experience over time.

In the current higher education sector in Ireland, there is much inefficiency with regard to delivering services to students and staff. The higher education sector endeavours to make all the services they deliver more useful, usable, efficient and student-centred but sometimes there is insufficient consideration of the whole student experience and supporting of the same. The current complexity of the processes can cause frustration for those involved, in particular, front-line staff and students, often due to a lack of cross-functional communication.

2.1.1 Design Thinking and Service Design

Design Thinking is a common set of design practices that applies across many disciplines including product design, industrial design, information design and of course Service Design. Design Thinking is an approach to problem-solving that requires a natural sense of curiosity, discovery and questioning. It is human-centred and empathetic and involves the end-users in the design process with a key role in shaping the solution, end product or service. Service Design is a set of tools and techniques that may be appropriate in some design contexts. It is a different application of Design Thinking that focuses on the customer experience of a service within an organisation. There is an area of overlap between Design Thinking and Service Design; both require thinking like a designer and translating ideas into reality.

In the context of this research, Design Thinking will be used to describe a general bottom-up approach to innovation and transformation with the goal of solving problems. Service Design will refer to the set of tools and techniques, such as *Service*

Blueprinting[7] or Customer Journey Mapping[8], which will help to solve those problems by creating services that are unified, practical and efficient and of course, user-centred.

Both Design Thinking and Service Design offer a new way of communicating and collaborating for people that are new to the disciplines. For this research, the approach is to see if Design Thinking, the process of thinking more creatively about existing problems, can be embedded using a set of tools and techniques, that is Service Design. The decision about what tools to use for what problems will come from learning and doing and through experience gained as the organisation learns from each cycle of action.

2.1.2 Customer Experience

Throughout this research the term 'customer' will be used in the context of customer experience, customer-centric services and co-design with customers. The question then arises as to whether students are customers of the higher education system. When discussing Service Design, customers are the users of a service and for the purposes of this research, students are the customers of those services. This means that academic, administrative and technical staff in an institute are the key people involved in delivering services. In addition to this there are internal services delivered from staff members to other staff members and also to external stakeholders. Throughout this thesis, the services discussed are from an administrative perspective and not an academic angle. Improving the student experience in this setting means improving the processes and systems, providing the right information to students on time and responding to student queries and concerns in an efficient manner.

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[7] A Service Blueprint is a map that describes the quality and nature of the service interface between the user and the touchpoints of the service.
[8] A Customer Journey Map is a diagram that represents the whole interaction of the customer with the service, including thoughts, feelings and emotions.

2.2 Research Question

To assess how Design Thinking can be used as an approach to analyse and improve services at each stage of the Student Lifecycle and embed this approach as a long-term sustainable change enabler in the higher education service system.

This review seeks to research the existing literature to answer the following questions:

- Can innovation become a core activity in a public sector organisation?

- Can Service Design tools and methods help an organisation to innovate?

- How can individuals at varying levels of the organisation become involved and energised in order to effect positive change?

- How can Design Thinking as a new approach assist in shifting an existing institutional culture?

- Who in the organisation needs to lead and implement the design process as a new way of working?

- Can co-design get people to collaborate collectively, and be practised at many different levels and for different purposes?

For this literature review, as there is a dearth of knowledge and research on innovation in higher education, academic research focused on innovation in the public sector will be used for comparative purposes. There is some academic discourse on Design Thinking from organisations such as the Design Management Institute (DMI), Service Design Network (SDN) and ServDes, a Service Design and innovation conference. This discourse is perhaps not explicitly in higher education, but they are experts with knowledge and experience in implementing Service Design in the public sector. This is something that is currently being discussed a lot across the European Union and this author is contributing to this conversation by addressing this gap in higher education while sharing the results among the design and public sector community.

2.2.1 What this review will do

This review focuses on a number of areas which are deemed to directly influence whether Design Thinking can be used as an approach to analyse and improve services

at each stage of the Student Lifecycle. As the research was conducted in action research cycles, the literature review cultivated new learning at each stage. Knowledge was gathered by reading books, journal articles and conference papers, in addition to attendance at online courses, webinars and conferences, and networking with the existing design community both in Ireland and worldwide, through social media, blogs and websites.

Due to limitations on time, this review focuses on the key enabling conditions for change across several action research cycles. This review does not delve deeply into the area of organisational change but it does conduct enough research to understand how to use the learnings from the change experts, Kotter, Kanter et al. Similarly, because organisational culture is such a diverse and large topic, this research focused on organisational culture in relation to Design Thinking. Innovation is considered to be an important aspect of change but again, the area is large and so authors that deliberate innovation in relation to Design Thinking were analysed. The research takes a glimpse at the area of business process improvement but is considered a separate area as this research is trying to move one step further from traditional business process improvement.

2.3 Research Strategy

When setting out on this research journey an abundance of contextual reading was done in the area of Service Design, primarily because this was a new area for the author. In order to implement the first action research cycle, some research was undertaken on Service Design as a methodology and how it could be used in a higher education organisation like CIT.

Interestingly, after the first action research cycle, the review of literature evolved in the direction of studying organisations, change and employee engagement and how to motivate organisations to embrace new ways of working. The reason for this was due to a number of obstacles discovered during cycle one, including the reluctance of employees to steer away from their current ways of working.

Figure 5: The literature review process

During each action research cycle, a contextual review of the literature was performed with appropriate breadth and depth across six themes. As a result, the literature review focuses on the key areas that need to be addressed and the critical factors for Design Thinking to become a core practice in the public or higher education sectors.

Whether Service Design tools are exclusively used within an individual project or as part of a larger process, Design Thinking and in particular co-design has the potential to open up conversations. The exchange of knowledge between users of a service and the 'makers' of that service creates an opportunity to co-define the right problem or challenge in a collaborative way and make sure the outcome is truly relevant. Co-design can assist CIT in improving the efficiency and effectiveness of service operations while at the same time, delivering value to the end users.

This chapter is the first step on a practice-based research investigation to ascertain if higher education can use Design Thinking to:

- Transform existing services;

- Enhance the staff and student experience; *and*

- Make sure the right tools are in place to support staff and students in an institute.

The research areas that were reviewed as part of this study include Innovation and Culture with a particular focus on the public and higher education sectors. The areas of Service Design, Change Management, Design Thinking, including co-design, were all reviewed, as well as how to embed Design Thinking in an organisation and the role of Design Leadership in addressing the research question.

2.4 Service Design

The emergence of Service Design in 1984 as a tool to be used by organisations was a significant step in realising that services should be subject to the same precise analysis as other business operations. *Service Blueprinting* enables organisations to develop new and improve existing services by exploring all the *fail*[9] and *wait*[10] points of that service (Shostack, 1984). Indeed Gloppen (2009) acknowledges that there is little research on Service Design as a strategic resource for service organisations. Preliminary research has found that there is a lack of realisation by management that Design Thinking can help them to problem solve and innovate and deliver true change.

Service Design looks at the design of a service from the user perspective and can be used to create new or improve existing services *(*Moritz, 2005*)*. User experience and the involvement of users in the co-design process is paramount to what Service Design stands for (Holmlid, 2009; Moritz, 2005)*.* Service Design is a holistic integrative approach that uses a wide range of tools and methods to deliver more value primarily

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[9] A fail-point is any point within the encounter that has potential to affect customer experience.

[10] A wait-point is a point where the waiting time is likely to exceed average or minimum tolerable expectations.

to the end user but also creating a more efficient and effective organisation in the process.

Service Design and in particular, *Service Blueprinting,* can help organisations and critically higher education, to better understand, assess and improve the services provided to both staff and students (Ostrom et al, 2011). Service Design and Design Thinking can support any institute in becoming more focused on the student perspective, but it will also engage employees in creating new, or improving existing service offerings. Higher education is a service. A service is an interface with a customer. In any higher education institute, there are many services provided at various stages of the Student Lifecycle, from prospect to alumni.

It is vital to understand that Service Design comes with a set of prescribed tools as outlined by Stickdorn and Schneider (2012) and a methodology needs to be in place to guide the designer and participants through the stages of a typical process. There exist many toolkits that enable groups to work together to create solutions from the Collective Action Toolkit from FROG Design, Double-Diamond from the Design Council, Stanford d.School Methods and the HCD Kit from IDEO. Although a methodology and toolkit are not essential for designing a new service, they do provide a framework for being more open and collaborative and can be used in conjunction with existing practices.

In order to take the design process from initial information and insight gathering, through to defining the right problem and delivering a solution to fix this problem, there are a number of key elements. Many authors agree that a service is made up of a series of *touchpoints* and an evolving attitude that is user-centred at its core (Stickdorn and Schneider, 2012; Moritz, 2005; Bitner et al., 2008).

Traditional improvement methodologies such as Lean, Systems Thinking and Nudge, are more focused on operational improvement, while uniquely Service Design involves the user in any embedded innovation. Whicher et al (2013) indicate the high-level differences between these different methods where Service Design occurs at the "interface with the user" and Lean and Co-production focus on more efficient operations. Snook et al; (2014) emphasise the key differences as process driven versus experience driven. The involvement of the user in the design process is also a

fundamental difference and Carr (2012) argues that Lean is too systematic and unfeeling, focused on eliminating waste and cutting disparity.

	Service Design	Lean	Co-production	Systems Thinking	Nudge
Aim	To create new services where all touchpoints and interactions have been designed.	To reduce waste in the system while preserving value.	To engage service users in the delivery of services	To improve and optimise the service system	To make small changes that encourage behaviour change
Where Does it happen?	Interface with user or customer.	Productions and operations	Operations	Service management	Middle management
Compete on cost, experience or quality?	Experience & quality	Cost & quality	Cost & experience	Experience & quality	Cost & quality
Most focussed on service user or provider?	User	Provider	User	User	User
Strategy or operations focused?	Strategy	Operations	Both	Operations	Operations
Delivers radical innovation?	Yes	No	No	No	No

Figure 6: Innovation methods table (Whicher et al., 2013)

Sangiorgi (2011) observes that Service Design can be considered as a means for "societal transformation" as it involves staff, the public and the organisation in a co-design process which can introduce a "human-centred design culture". The culture of an organisation and its influence on improving services will be discussed in more detail in section 2.6.

At present, in the public sector, Bailey et al., (2014) have found that a great deal of Service Design happens without any professional or practical design input, which perhaps needs addressing. Service Design has the power to unleash creativity and innovation in the higher education sector, essentially because it is a co-creative process and focuses on students as customers. There are a number of challenges with introducing a new methodology and Service Design does not happen in isolation. It involves changing mind-set, reframing problems, changing existing work practices, encouraging more collaborative cross-functional activities and ultimately cultivating a more human-centred creative culture. Indeed, (Martin, 2009) points out that an organisation needs to build skills to change organisational processes and norms over time and "sow creativity across traditionally administrative functions".

The problem with Service Design seems to be the difficulty in selling it to the organisation and designers themselves find it difficult to explain what Service Design really is. Brown (2009) observed that he spent far more time explaining and justifying to clients what design was rather than really doing it. Kimbell (2011) acknowledges that even those that support the application of Design Thinking have difficulty explaining it. Non-designers feel uncomfortable with the flexible non-linear approach that Service Design brings (Marino, 2011). Martin (2007) maintains that many business leaders find the lack of structure and predictable outcomes hard to deal with and they have difficulty understanding the language of design. The word design can often bring a sense of mystery to a process and the challenge then is to encourage employees not to be afraid of design and eliminate the perception that they have to be highly creative people to use design tools and techniques. Bailey (2012) questions whether a service designer is required to be design trained and argues that the tools and methods available are not unique to designers and most people can embrace them effectively. Kimbell (2010) stresses that Service Design is chaotic, communal and evolving. She observes that service designers do not always have a precise understanding of organisational culture, and the importance of employee buy-in when designing customer experiences. Building in-house capabilities in service design tools and techniques is therefore vital to embedding design in any organisation, as these in-house designers will have direct knowledge of how things work.

2.5 Organisational Change
A widely recognised belief when delivering any kind of change is the vital importance of creating a vision, selling that vision to all ranks of the organisation and clearly communicating the vision while drumming up some excitement (Kotter, 1995; Kanter, 1984). This vision should be easily understood and will motivate people towards the change effort. Kotter (1995) cautions that without a sensible vision, a transformation effort can easily dissolve into a list of confusing and incompatible projects that can take an organisation in the wrong direction or nowhere at all. By their nature, Service Design tools allow people to work towards a vision that is user-centred. Certainly a vision is important but what many organisations lack are leaders at all levels that can make this vision a reality. Basadur (2004) believes that leadership towards change is

about enabling people to think collectively and become more innovative and proactive rather than reactive. He believes that leadership is less about personality or behaviour styles and indeed Martins and Terblanche (2003) recognise the importance of creativity and innovation in the change process and emphasise that embedding a fresh and creative culture is paramount to achieving real change.

Change needs to be driven from the top, but likewise it is imperative that there is buy-in from stakeholders at all levels of the organisation (Kotter, 1995; Kanter, 1984; Burke, 2013). It is not adequate to include staff in a co-creation and design process; they need to appreciate what the change is about, how it will influence their day-to-day jobs, and how it has the potential to transform the student experience. It is important to understand the end goal and how their ideas should be at the forefront of this change process. In order to create buy-in, it is clear that there is a link between Service Design practices and organisational change, and co-creation activities are an effective mechanism for embedding change. Co-design engages communities to work collectively towards the right solutions. Junginger (2007) describes that product development or service development and design can be a vehicle for organisational change. Junginger and Sangiorgi (2009) indicate the potential of Service Design to foster internal change within an organisation and they stress the importance of a human-centred approach that involves the people on the inside of the organisation.

It has conclusively been shown that organisation silos have a huge impact on change and are a constant stumbling block as iterated by (Von Stamm, 2008; Beckman and Barry, 2007). Where there is an existing issue of organisational silos, individual departments can focus on their cog in the wheel and not the entire process as a whole. It seems clear that a lack of integration across organisational departments in providing a streamlined cohesive service to users is one of the main hurdles to jump when effecting change. Departments are often focused on fire-fighting immediate operational issues and do not always get the opportunity or the time to be innovative or experiment with diverse ways of working. Mulgan (2007) blames these silos as the main barrier to dispersing tacit knowledge and points out that because power and money are organised in this silo structure, innovation is stomped on. Similarly Trkman (2010) argues that these horizontal silos create inefficiency and are an obstacle to the flow of information across the organisation. Thomson et al., (2012) are encouraged

that good Service Design approaches can drive action across silos, allow new ideas to prosper and catalyse change. Beyerle et al., (2011) point out that there is no shortage of change projects in many organisations but there is no collaboration between them as a result of organisational boundaries.

Various authors have considered the culture matter such as Strebel (1996) who observes that many employees do not seek or welcome change as it is disruptive and interfering. Afshar (2014) highlights advice from David Bray, CIO of FCC, who recognises the importance of putting culture first and insists that 80% of the focus should be on people and 20% on technology; not the other way around. Liedtka (2010) asserts that you need people at every level on-board and eager, not just those at the top of the chain. Kotter (1995) substantiates this and believes it is important to "make the change stick" by fostering a new culture. A new culture will develop over time through small consistent innovations; this can take years and must not be rushed. The culture of the organisation can influence how change is perceived and adopted, which will be discussed further in section 2.6.

Kotter (1995) points out that if change is needed within a specific department, then that department manager is fundamental. He emphasises that if these individuals are not "new leaders, great leaders, or change champions, phase one can be a huge challenge". Both the authors experience and the existing literature demonstrate that it can sometimes be necessary to implement a small change project in order to convince a department manager of the potential of such a change initiative.

What many authors do not seem to consider is how to influence change from the bottom-up with background support from the top. The possibility of instilling ideas in the minds of those making decisions so they can alter their own approach to culture and change, and make design-related decisions, is not something that is widely discussed. This research will address this gap in the literature.

With any change initiative, achievable short-term targets need to be set, and once accomplished, will motivate people to persist and keep trying. The celebration from quick-wins will create buy-in for future change projects. It is important to consider current work habits and communication styles of individuals and groups, and attempting to change these to leverage more sophisticated alternatives.

Hammer and Champy (2003) propose that process re-engineering must be an all-or-nothing organisation-wide strategy and cannot be carried out in small careful steps. Based on the existing review of change projects in higher education, incremental change, along with participation from all stakeholders is imperative, particularly when the culture of an organisation is resistant to change. Other authors disagree with Hammer and Champy and harmonise that the short-term wins are important to create momentum and celebration and any significant organisational improvement. Kotter (1995) highlights that "commitment to produce short-term wins helps keep the urgency level up. Renewal efforts take years, not months. The number of change efforts grows each year". Jenkins (2008) asserts that a whole cultural revolution is needed and short-term successes do not encourage people to think creatively in the long-term. Is it then more important to focus on reshaping the culture of an organisation rather than delivering quick-wins as a means towards change? Perhaps it is the quick-wins and sharing the stories of success that will contribute to reshaping the existing culture. Service Design has the potential to transform an existing culture by exposing needs, behaviours and wishes. Service Design can take people away from too much rational and analytical thinking and allow people to explore ideas and intuition and experiment like never before. Service Design and Design Thinking, according to the Design Council (2011) can introduce disruption into an organisation and stimulate innovation.

According to Gouillart (2014), in order to implement change and transform processes in an organisation, employees and external stakeholders need to be jointly engaged in designing the new model of the business. He stresses that many conventional change approaches run out of steam because of their internal and top-down character. Bailey et al., (2014) also concur with other authors and claim that it is far easier to do "small scale repurposing of services" rather than large scale organisational change. (Sangiorgi, 2011) outlines the transformative role of Service Design and the concept of "transformational change" where Service Design is the facilitator of change within an organisation. She points out that making small improvements with regard to an existing service does not necessarily have a transformational impact. Therefore this research is seeking to determine if those small quick-wins that are attempting to embed Design Thinking within the organisation will eventually lead to transformation.

This will be done through a number of action research cycles in collaboration with multiple departments by empowering those involved in the research as well as evaluating outcomes and incremental impact.

Again, this author, along with many others refers back to the organisational culture, and the attitudes and behaviour of the employees and management providing the service, as having a huge impact on an organisations interaction with its customers and employees. Bailey et al., (2014) acknowledge that public service change necessitates people being involved in the change from the start; these people being the public, citizens and users of a public service. This would in turn lead to users adapting the change and embracing the new way of doing things. Jenkins (2008) backs up this argument by expressing that design leaders need to focus on reshaping a traditional organisation into a more modern one and at the same time create an environment that is favourable towards design, not opposed to it. He believes that the main roadblocks usually encountered in the process of setting up a design competence arise out of existing attitudes and behaviours within the organisation. He stresses that these anti-change attitudes "will squeeze the life out of design if they are allowed to continue unchecked". So how then can one transform an existing organisation to becoming design-friendly and reshape the existing cultural standards? Change is constant and an organisations ability to be proactive to change rather than reactive will determine its success and agility. It is these observations of the existing literature that define the research question and sub-questions such as how can Design Thinking influence the existing culture and help an organisation become collaborative and innovative.

Burnes (2004) asserts that there are a range of approaches to change and that an important component in achieving effective change is to choose the most appropriate method for the type of change being undertaken and the conditions in which it is being implemented. Anderson and Ackerman Anderson (2014) examine different types of organisational change: developmental, transitional and transformational. They describe developmental change as the simplest form in that it is an improvement to something already being done, transitional change as introducing something new and requiring employees to let go of old ways of doing things. Finally transformational change requires a change in people, culture and mind-sets and often

fails because of employee resistance. Maddock and Morgan, (1998) highlight that there is a tendency to underestimate the influence that culture can have on transformational change. They emphasise the importance of moving away from traditional approaches and bureaucratic practices.

Although up until now the use of design as a way to transform public sector organisations has been on the small scale, there are examples of large scale transformational change such as the Helsinki Design Lab and Nesta's Creative Councils project. The issue that is identified by Bailey et al., (2014) is that designers are not always in a position of power that is required to effect real change. Valkama and Anttiroiko (2009) highlight that in order to transform a public sector organisation, it needs to move from a traditional functionally organised bureaucracy to a user-centric collaborative one, in essence a profound change. In defining public sector change, Kattel et al., (2013) dispute that without changing the core tasks, change cannot be described as ground-breaking, but incremental; they maintain that simple organisational change does not equate transformation.

However, much of the literature seems to overlook the possibility of small incremental change being delivered from the bottom or middle of the organisation and the impact this approach could have on the journey towards organisational change. Overall, there is not enough existing research on using Service Design as a bottom-up approach towards transforming an organisation into an innovative, progressive, efficient and user-centred one. This research is also unique in that it has the perspective of an inside-out designer and the potent effect this has on implementing a Service Design approach. External designers often bring a fresh outlook to an existing problem but it is an inside-out approach that can bring experience and knowledge which has the power to force lasting change.

2.6 Organisational Culture in the Public Sector

Organisational culture is central to the running of an organisation. As it is intangible and vague, the type of culture that exists in an organisation can often be difficult to define. It is based on tradition and can be very powerful in determining how people work, interact with each other and make decisions. In order for innovation to occur, the existing culture must first be understood. A strategy and structure needs to be put

in place that allows behaviour to change in a positive way. Improving communication across departments can be a first step in the right direction. Organisations need to shift their attitude towards a culture focused on innovation.

Lundy and Cowling (1996) describe culture as "the way we do things around here" and Beckman and Barry (2007) concur that culture represents the behaviours that people develop and reveal over time. Changing behaviour has a direct influence on any culture. The focus should move towards thinking and behaving differently. At the same time Kotter (1995) acknowledges that an individual's actions within a team or organisation, influences the broader behaviour and how collaboration, conversations and connections take place.

The public sector is often considered to be a risk and change-averse culture and one that is not supportive of creativity and innovation (Jenkins, 2008; Kattel et al., 2013). Bureaucratic and hierarchical in make-up along with internal politics provides a strong influence on what goes on, and can be hard to crack. Flexibility and a willingness to adapt are not key characteristics of the public sector and are very dependent on individual leaders and managers. There is a need to deliver public services in a better way by means of a user-centred approach.

Martins and Terblanche (2003) reveal that organisational culture forms an essential part of the general functioning of an organisation and this is a contributing factor as to whether creativity and innovation can occur. They propose that culture influences the degree to which creativity is encouraged, sustained and applied and the conflicting power of culture in an organisation is that it diminishes efficiency. Matthews et al., (2012) indicate that past practices, hierarchical structures and silos within an organisation can present as barriers to change and innovation. Indeed Battarbee et al., (2014) refer to an "unsympathetic culture" that is neither focused on customer experience nor nurturing an empathic mind-set which can help to foster a new culture.

Stuart (1998) argues that empirical research has overlooked the influence of organisational culture and internal politics on the introduction of new products or services. It is obvious to this author that culture plays a momentous role in the success of innovation in any organisation. Service Design can support culture change when employees participate and interact in the change process. Using workshops to co-define existing problems and creatively solve them with other colleagues can instil a

desire for change and release ideas and energy within individuals. Fox and Brewer (2010) identify that the level of innovation will only increase if there is a supportive culture that rewards and encourages new ideas. They also insist that innovation must come from the bottom and middle and not just top-down initiatives. On the other hand, Kanter (2013) notes that many leaders stifle innovation; these leaders do not take risks, do not allow time for new ideas to be implemented and blame problems on the people at the bottom of the organisation. The evidence in CIT indicates that when front-line staff are given time to innovate, they feel valued which results in a shift in the values and norms of the organisational culture. Service Design as a tool can allow employees to explore problems in their own area without requiring top-down or external support. Service Design could be a powerful mechanism to counteract the existing hierarchical top-down approach to change. Indeed it can provide an effective means of realising bottom up innovations which fundamentally will give the organisation a chance to maintain progress and focus, so these projects do not run out of steam. Recognising the importance of a bottom-up approach, this research seeks to explore Service Design tools and techniques as a method for inspiring a new cultural pattern.

Kanter (2013) encourages the use of open *Brainstorming*[11] to look for the small quick-wins rather than magic bullets; any action is superior to none. Furthermore, Brown (2009) highlights that staff at all levels should be trained in the tools of Design Thinking. He believes that changing culture to one focused on innovative activities and attitudes can be done through the introduction of new tools, setting expectations up-front and measuring the innovation that is required. He favours workshops as a method to expose people to Design Thinking and reveals that pilot projects will help market the benefits of Design Thinking within an organisation. This was validated in a recent pilot project in the author's organisation where it was shown that small innovations can have a positive impact and lead to more change. In conjunction Tushman (1997) maintains that the older an organisation is, the more it develops traditions, hearsays and descriptions of "how things are done around here". He also

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[11] Brainstorming is a creative approach to come up with lots of thoughts and ideas, usually to solve a problem.

concedes that management need to promote continuous improvement while at the same time allowing time for new ideas and experiments to flourish.

There seems to be little agreement in the literature on the type of culture needed to improve creativity and innovation, however, Martins and Terblanche (2003) identify the dimensions that influence the degree to which creativity and innovation take place:

1. A **strategy** that encourages creativity and innovation in the implementation of new products and services.
2. A flexible **structure** that encourages teamwork and collaboration across existing silos.
3. **Support mechanisms** in place that encourage new ideas such as time, information, resources and technology.
4. Employee and management **behaviour** that encourages innovation, idea generation, risk taking and support for change.
5. Open **communication** between individuals, teams and departments.

It can be argued that many of the problems that exist in public sector organisations are associated with their tiered structure, bureaucratic nature and management style (Basadur, 2004; Claver et al., 1999) which leads to inaction, rigid methods and a lack of new ideas. Higher education institutions have a similar set of characteristics that are commonplace and analogous to these types of organisations. Service Design offers the potential to address these problems and this research seeks to articulate the value of a design-led approach to innovation. Service Design can overcome existing barriers by establishing trust and building relationships, encouraging a culture of openness and developing a shared understanding of the current situation (Yee et al., 2015). According to Seddon (2008), "command-and-control thinking" turns organisations into top-down chains of command where work is planned in silos, management make decisions and those on the lower rung of the ladder do the work. There is an obligation to find better ways of meeting the needs of customers, increasing efficiency and improving outcomes. On the other hand Christensen and Overdorf (2000) identify that managers need to assess the abilities and disabilities of the organisation and the types of innovation and change the organisation is capable

of handling. This means assessing the existing resources, processes and values and how each of these affect the organisations aptitude for change.

It is claimed that many existing public services lack the ability to be agile and efficiency is often defined in terms of a financial return rather than a customer experience (Boyle and Harris, 2009; Claver et al., 1999). Mulgan (2007) describes this as "doing the same thing, only trying to do it more cheaply". He also uses the term "core economy" to describe the core users of a service and a failure by organisations to use this "core economy" to co-create the service.

Evidence so far suggests there is a strong link between culture and change and it can be assumed that in order to implement any positive change, there has to be a shift in the organisational values. Influencing change in individual departments can involve identifying a sub-culture that perhaps does not exist organisation-wide. Every organisation will have a different path to changing mind-set and figuring out what that path is can be a brave encounter. Mulgan (2007) observes that "human beings are rational and without licence from the top, few people in hierarchical organisations will be willing to take risks". He wonders whether creative tools can encourage innovation in a sustainable way, but at the very least they may help an existing culture to become more open and willing to see things in new ways.

The National Strategy for Higher Education (2011) reminds us that institutions need to be "internally adaptive in order to be externally responsive" and in order to achieve more engagement with the wider community a "change in culture and internal business processes of institutions is required". Many higher education institutions in Ireland have a strong management rather than leadership culture. It is leaders that will play an important part in shaping a new culture based on their own desire for continual improvement. It is these leaders that will be able to empower and cultivate employees to a new era of change and innovation. Further discussion on leadership and in particular design leadership will continue in section 2.9.

Changing mind-set and culture to stimulate creative thinking among the front-line employees will build and foster a more innovative approach to "how we do things around here". Harnessing new ideas can make the organisation more effective and better equipped to fix problems before they happen.

2.7 Innovation in the Public Sector

This section investigates the use of a design approach to innovation in the public sector and is based on research by practitioners primarily in the UK government rather than academic papers. Academic inquiry into innovation in the public sector is a developing space, and the gap between practitioners and academic researchers is closing.

What organisations need most is innovation that happens every day. The small disruptive ideas that solve a particular problem in a particular situation will foster a culture of innovation that could eventually lead to big breakthrough innovations. This research examines whether design can be an enabler for innovation to become a core activity in the higher education sector. There is no one simple definition of what innovation is but it can be considered as a new idea, product or process that leads not only to improvement but doing something different rather than doing the same thing better. According to West and Farr (1990), innovation is something novel and unique which results in change. However Martins and Terblanche (2003) note that change is not always innovative as it does not always involve new ideas and transformation. They regard innovation as generating and implementing new ideas to solve a problem or improve practice.

Innovation is not seen as a core activity in many public sector organisations and there is a different process of innovation suitable for public and private sectors and the diverse range of organisations in both. The inflexible nature of public sector organisations is often the main cause of the lack of innovation as mentioned by Mulgan and Albury (2003). In fact Borins (2002) proposes that public sector innovation is a figure of speech due to an absence of competitive pressure to modernise. Mulgan (2014) observes that design can bring flair and creativity to otherwise dull and changeless services but must be used in conjunction with project frameworks and other skills, which can compel people to see issues and prospects in a renewed way.

Von Stamm (2003) observes that creativity is associated with our thinking, and innovation associated with our behaviour. In order to allow people to think and behave differently in any organisation, the barriers to the collective creativity and the focus on current concerns needs to be removed or at least reduced (Beckman and

Barry, 2007; Brown, 2009). Many initial innovations will be small quick-wins that are focused on incremental change, and this is a good place to start. Rather than just encouraging people to think of new ideas, transferring those ideas into practice is what fosters real change.

Many people have ideas and a voice but do not get an opportunity to act on their creativity as a result of day-to-day forces. In order for creativity to flourish, it needs the right leadership to foster an environment which will allow people to ideate, experiment, take risks and explore their hidden talents (Boyle et al., 2010; Droll, 2013; Snook and Design Managers Australia, 2014). Gouillart (2014) agrees that it is the leaders that need to support and encourage more experimentation. She predicts that co-creative transformation will attract change agents across an organisation to come together in a process of continuous innovation. Likewise McPhee (2009) points out that innovation needs a supportive setting in which to grow.

2.7.1 Innovation in Higher Education

In higher education, an environment needs to be cultivated where people know it is acceptable to take risks, experiment and unleash their capacity for innovation. Many authors have questioned how the capacity for innovation can be enhanced by creating both a physical and psychological environment to do so (Droll, 2013; Mulgan, 2007). In the 2009 Better Practice Guide from the Australian National Audit Office, McPhee (2009) reminds us that in order for innovation to prosper, it requires dedicated resources to test and trial new ideas. Indeed Harris and Albury (2009) complain that current methods of innovation are no longer good enough because they do not include actors in the co-creation process, such as front-line workers and customers. Similarly Ostrom et al., (2011) emphasise that higher education needs to be viewed through a "service lens" where an organisation focuses on the value being delivered to the student, and the role of the student in co-creating that value.

In order for creativity to become acceptable in the higher education sector, steps need to be taken towards alleviating, and in the long term, removing the barriers to change, and subsequently allowing space for innovation to happen (Peter and Paul, 2001). The evidence indicates that this innovation should be borne out of co-creation activities encompassing both employees and customers of the organisation.

Innovation in the public sector can lead to more efficient organisations and better services for the public. Campbell (2014) contends that the public sector is traditionally risk averse, and it can be an enormous challenge to create new ways of working and to inspire employees to cultivate new ideas, and most importantly, turn those ideas into reality. Other authors concur that the public sector is static, complex and risk averse and needs a change in mind-set (Boyle and Harris, 2009; Droll, 2013; Yee et al., 2015).

2.7.2 Barriers to innovation

A small but growing body of literature has been written by design consultancies based on projects implemented across public sector organisations. In many cases they have identified similar barriers to innovation and propose the use of Design Thinking as an innovation tool in the public sector. Although these are not academic papers, they provide valuable insight into current work being done in the public sector. A study of papers by Snook, Design Managers Australia, IDEO, the Design Council and NESTA reveals the following barriers:

- **Silo mentality**: Mulgan (2007) proposes that high walls in organisations divide people and departments and Snook (2014) identify that Service Design needs to deliver innovation across silos but is often prevented because of separate department budgets.

- **Bureaucracy and culture:** Culture, internal politics and agendas as described by Snook (2014) along with miscommunication can unsettle collaboration efforts and stifle innovation, also highlighted by Fox and Brewer (2010).

- **Human-related barriers** such as incentives, education, training, management and leadership indicated by Droll (2013) are all important internal factors. A lack of innovative leadership is an intangible impediment. Human issues often outweigh any physical or tangible barriers.

- **Risk-averse and rules-based**: These types of organisations are usually reluctant to take risks and are reliant on certainty and stability (Snook, 2014). Traditional and conservative is favoured. Public servants tend to be nervous about experimentation and trying out ideas. Management encourages the status-quo (Fox and Brewer, 2010), innovation evaporates because of too many rules (Mulgan, 2007) and employees do not always understand the value of innovation.

- **Co-creation**: Boyle et al., (2010) mention the mechanisms that need to be put in place to support co-production which has been described in other literature as trying to fit a square peg into a round hole. The fact that there is no defined process or incentive for introducing new ideas, contributes to a lack of desire to co-produce.

- **Targets and measurement**: Innovation can often be difficult to measure and the public sector is often operating in a reactive way to problems and issues, rather than having agreed innovation goals.
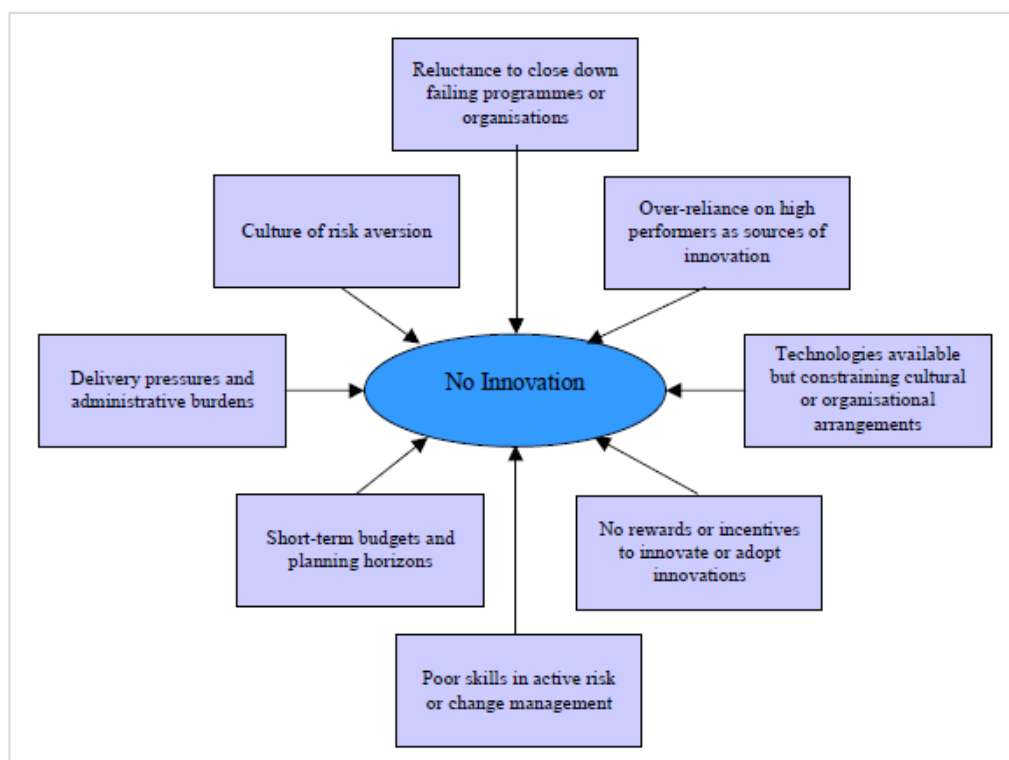
Figure 7: Barriers to Innovation (Mulgan and Albury, 2003)

Furthermore those same authors and design consultancies reflect on how to overcome barriers to innovation and introduce a new way of working:

- **Culture:** Setting up the right conditions for change (Snook, 2014) by fostering an open mentality and new behaviours (Mulgan, 2007; Seddon, 2008) before bringing design into an organisation, needs to be the first priority.

- **Leadership:** Leaders need to be put in place that will actively pursue innovation and be open to new ways of working (Liedtka, 2011). She stresses the importance of encouraging managers to embrace uncertainty.

- **Allies:** Finding allies and like-minded thinkers who understand Design Thinking and are passionate about it will help to build momentum and refocus energy (Carnegie, 1995; Liedtka, 2011).

- **Non-stop change:** Creating an attitude of continuous improvement and iteration which has been trialled, tested and altered (Mulgan, 2007) will allow for iterative incremental enhancement of services (Snook, 2014).

- **User-centric innovation:** Focusing on customers, citizens, students so that those delivering the innovation can consider the organisation from the outside-in (Droll, 2013; Seddon, 2008). Understanding what the customer wants and designing services that work for customers will turn the focus to outcomes rather than processes.

- **Innovation framework**: Creating a framework that will allow design-led innovation to be introduced and embedded within an organisation will eventually lead to a new culture of creativity.

- **Creating space**: Creating space for design to operate within is vital and will eventually lead to design becoming embedded in the organisation (Design Council, 2013; Snook and Design Managers Australia, 2014).

- **Measurement and outcomes**: It is imperative to provide measures of improvement and generate successful and meaningful outcomes as this will qualify the process to continue (Hughes et al., 2011; Snook and Design Managers Australia, 2014).

Certainly in order for innovation to prosper in any organisation, it is necessary to strengthen the incentives for innovation by providing opportunities and skills to employees and management. This means having the right leadership in place to foster creativity and aligning the culture with new methods over time.

2.8 Design Thinking

Design Thinking can be described as a tool to generate unique solutions that tackle everyday problems resulting in more meaningful products or services for the end-users (Battarbee et al., 2014). It allows a group of people to collectively explore a number of opportunities and encourages them to be open-minded (Brown, 2009). Beckman and Barry (2007) define Design Thinking as a problem-solving process that involves actors from many disciplines using tools, methods and language that are diverse from normal everyday business function.

Design Thinking can be practised by everyone across the organisation, from front-line staff to senior management, as a problem-solving approach. Bailey (2012) suggests that employees do not need to understand the whole concept of Design Thinking or all the tools that are available to them, they just need to be able to apply the use of some tools in some projects with the hope that "the dissemination of Design Thinking goes viral within the organisation". Employees need to be empowered to use the tools themselves without supervision from the designers.

What is clear from numerous authors is that Design Thinking can release new energy and creativity but many employees may be too buried in day-to-day tasks and entrenched in old familiar ways for it to be successful (Bailey, 2012; Brown, 2009). Many managers recognise the rational, logical and familiar tools of business thinking and so Design Thinking can present itself as chaotic and messy, but it can be applied in a systematic way without "sucking the life out of the creative process" (Brown, 2009; Liedtka, 2010). In the same token, while trying to embed Design Thinking as a new tool for higher education, it is imperative not to lose any of the innovation, imagination and inspiration that this process brings by trying to put too much structure on it.

Design Thinking can play a vital role in the effort to achieve organisation-wide change and many authors agree that an organised, consistent and efficient approach is required if design methods are to be employed in daily work practices (Bailey, 2012; Brown, 2009). A number of authors contend that selecting the right people for a design activity is an important feature for success (Von Stamm, 2008; Matthews et al, 2012). They stress the importance of choosing people who are motivated by change and want to be involved, but also people that have integrity and respect within the

organisation. Change champions or design champions will be the vehicle for transformation and the agents of change (Battarbee et al., 2014; Liedtka, 2011). They will not let barriers get in the way, and they will seek out opportunities to bring the organisation on a new journey of design innovation. Therefore it is imperative, that in order to instil this new way of working in a higher education institution, suitable resources are employed along with the right people involved and energised.

Resistance towards adopting a Design Thinking methodology may transpire for a number of reasons but if employees can appreciate the benefits then it may prove easier. Much of the existing literature does not demonstrate how to entrench design tools within an organisation, where employees prefer the familiarity of their current way of doing things, even if that current approach lacks efficiency. Buchanan (2007) suggests that an organisation needs more than enthusiasm to embed design as a discipline of thinking and making. The tangible benefits will have to be clear to actors at all levels of the organisation if Design Thinking is here to stay. However, Gouillart (2014) posits the view that it is the compelling enthusiasm derived from using Design Thinking along with bottom-up and outside-in techniques, that motivates senior management to steer a different course.

Changing the relationships between the main actors involved in delivering a service, and those using a service, will help to build better service capabilities. Empathy will assist in discovering the moments of truth for all actors along the journey (Battarbee et al., 2014). Unless employees walk in the shoes of their customers, they will never gain a true understanding of their experience, and their thinking will be based on assumptions. Empathy involves immersing oneself in the experience of the user, observing the user and engaging with the user. In his book, Brown (2009) maintains that what makes Design Thinking different is the emphasis on the needs of people and observing their experience rather than coming up with a solution we think they want. He believes there are design thinkers in every organisation and we need to seek them out, foster them and free them up to be creative people and potential change champions. Kotter (1995) emphasises a "see-feel-change" approach rather than an "analyse-think-change" approach and suggests that in order to change behaviour, we should focus on people's feelings rather than thoughts; this is precisely what empathy does. Battarbee et al (2014) also believe that when an organisation allows itself to be

motivated by an understanding of people's needs, it can "unlock the creative capacity for innovation". This sort of attitude needs to be supported and fostered and it needs enthusiastic champions to "keep empathy alive".

The degree of empathy that an inside-out Service Designer brings is vast and unique as they can intimately understand existing experiences while working alongside the actors inside and outside the organisation (Boyle et al., 2010; Snook and Design Managers Australia, 2014). Designing change from the inside of an organisation yields a greater chance of embedding that change along with the tools that delivered it and many authors suggest building a "designerly mind-set" and to make use of "hooks" inside the organisation in order to infuse a human-centred design ethos from the inside (De Lille et al., 2012; Sangiorgi, 2011). Indeed, both Schraeder et al., (2005) and Martin (2009) acknowledge the importance of leading by example in public sector organisations and underline the need for a leader who will cultivate and champion Design Thinking right across the organisation. What is missing from the existing literature is how to engage senior management to influence the use of Design Thinking tools among front-line managers and staff. A gap therefore exists in the existing literature which demonstrates how to recruit change champions, instil a culture of Design Thinking and win over senior management, all while keeping the lights on in a higher education institute.

The term Design Thinking can sometimes create mystery and uncertainty, and rather than trying to sell Design Thinking as a new approach, the focus should be on the benefits it brings; the outcomes should speak for themselves. Human needs are fundamental to Design Thinking and these needs should drive innovation. Having the right people involved is essential, people who understand the need for change, and can be empathetic towards the users. This authors approach does not just concentrate on using design as a once-off change enabler but embedding design as a stepping stone towards real change.

2.8.1 Design Thinking and the Public Sector
Design Thinking enables government agencies to put people at the heart of the design process. The European Commission has acknowledged the necessity of design as a driver of change at national and local levels of public service. Droll (2013) recognises that design should be at the core of the public sector and the European

Design Leadership Board established in 2011 provides recommendations on how to develop design as a vital part in guiding how national, regional or local public services operate (Thomson et al., 2012).

Unlike Ireland, there are a number of design initiatives being implemented in the UK. Organisations like The Design Council and FutureGov are currently working with many local and national government agencies to help them transform their services using design. The Design Council (2013) created the Public Sector Design Ladder (Figure 8) in order to demonstrate that design can be applied at different levels and it can be used as a "diagnostic tool and roadmap for progression".
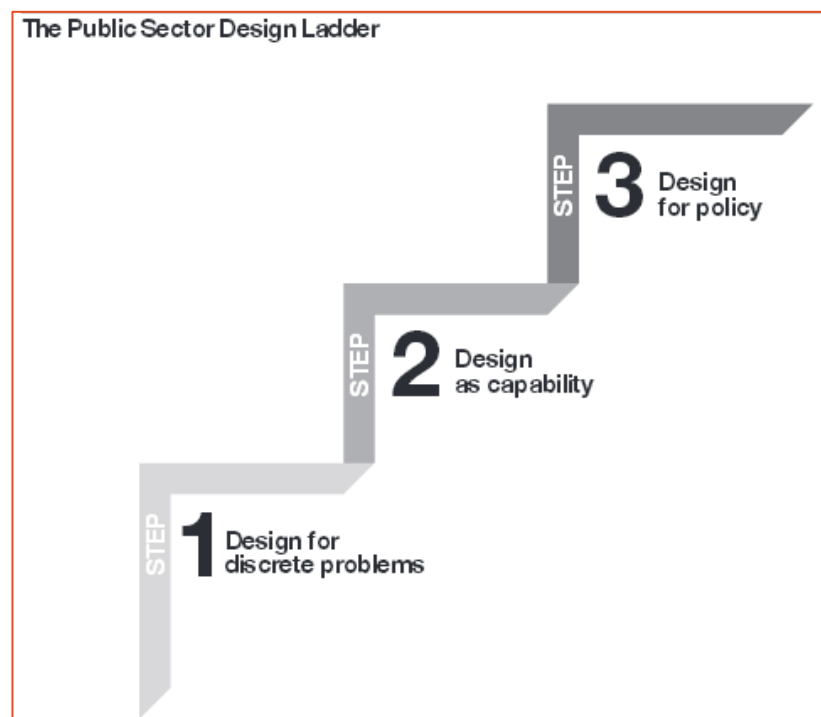
Figure 8: The Public Sector Design Ladder, Design Council (2013)

Some examples of how Design Thinking can be adopted in the public sector include Lewisham Council. A project was initiated with the aim of embedding Service Design within the council among employees as a new way of working. A "learning by doing" approach was used where front-line staff were equipped with tools and techniques in order to discover and fix real problems (Design Council, 2013). As a result of this project, staff morale at the council improved, cost savings were introduced and customers received a more efficient service. This reinforces the earlier argument that if those inside the organisation are observing and improving the services, the benefits

will be greater and more long-term. This can be further illustrated using the example of the redesign of the UK government's digital services by engaging with users to deliver simple and fast services online. The aim of the Government Digital Service (GDS) was to streamline the services they delivered online and merge the websites of all government agencies into one portal making them easier to use, faster and well-defined. This included 24 ministerial departments and 331 agencies and public bodies. The GDS team continue to refine the user experience and diffuse design throughout government agencies.

Indeed one that has to be mentioned, as it was the inspiration for research at CIT, is the JISC Enrolment Project in conjunction with the University of Derby. They used a Service Design approach to improve the student experience from pre-entry to "readiness for learning". Baranova et al., (2010) discovered that rather than assuming they knew what the student wanted, they "actively sought their input as end-user designers and co-producers of their own student experience". They continue to use Service Design as a methodology at Derby to focus on student retention throughout the delivery process. At the University of Derby, Baranova et al., (2010) found that Service Design was a powerful tool to engage not only the front-stage and back-stage[12] staff involved in the service delivery but also management. It was a transformative way to make everyone see the complexity of these processes, from the student perspective, and seeking student input in redesigning these services was a new approach, that could add value to both the university and the student experience.

2.8.2 Embedding Design Thinking
Cooper et al., (2013) suggest that in order for design to be truly successful, it must focus on both process and outcomes and embedding design in any organisation requires an expansive approach that looks at the whole situation and includes a broad range of stakeholders. Lockwood et al., (2012) agree that an organisation needs to cultivate and encourage positivity and creativity by delegating the process of problem-solving to a wide group of employees. They stress that using Taylorist[13] principles to organise work will not lead to new and better processes and services.

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[12] In a Service Blueprint, the front-stage refers to what the customer can see and comes into contact with, the back-stage is where all the support process and systems sit, behind the "line of visibility".
[13] Frederick Winslow Taylor's philosophy (1909) focused on the belief that making people work as hard as they could was not as efficient as optimizing the way the work was done.

Instead an organisation needs to move from one focused on tasks, to a more holistic organisation that requires creativity and combined brain power. Martin (2009) backs up these views and stresses that reliability will bolster any innovative efforts across an organisation.

In any forward thinking organisation it is necessary to bring people together to engage and enable them to think collaboratively and open up conversations. Indeed Junginger (2014) stresses the importance of recognising and understanding the "design legacies" or the way that design currently exists within an organisation. She describes design legacies as the practices that are learned and handed down across the organisation, from top-down and from one employee to another. In order to pave the path for co-creation and co-design the existing legacies must be identified and dealt with. Design champions, or change champions that use design approaches, can add value and credibility to any project. These champions can weed out the existing legacies, ensure employees do not revert to their old ways of working and expose people to a new way of working.

When selecting the right people to become champions, much of the literature advises selecting people who are credible, motivated and already have some desire for change (Kotter, 2012; Mumford et al., 2002). Matthews et al., (2012) use the term "design interpreter" as a necessary human force to inspire and blend opportunities across the organisation. Kimbell (2011) agrees with the importance of professional designers, interpreting the existing culture and then trying to embed a new culture. Clay (2013) asserts that one needs to surround themselves with people that are supportive of change and "get it". He suggests that one cannot be a lone change champion and connecting with like-minded "intrapreneurs" within one's own organisation will save time and energy. Designers play an important social role when delving into multidisciplinary project teams that may have historical nuances. One needs a community of Design Thinking supporters to work together and make sure the good ideas come to fruition. Tjendra (2013) strongly believes that several elements are necessary to establish and embed a design culture including top-down advocates, front-line employees who are empowered and fired-up, and a process champion who has a strong design motivation.

Design Thinking is an enabler and a skillset that can be applied to challenges within any organisation. The challenge is to enable non-designers to participate and facilitate design-led change without the need for a designer. Therefore, in order to ensure design is embedded in a sustainable way it is necessary to create design champions who can propose and apply design methods in a positive way. Employees and managers need to be trained to apply design tools in their own environment, which will lead to some incremental improvement in an existing process or service. There is modest research on this topic and little existing evidence on how to embed design as an approach among public sector employees.

In an attempt to use existing change management practices to guide a design-led approach in a large complex organisation, Lin et al., (2011) discovered the importance of nurturing personal ownership of the design process by creating an engaging, interactive and fun experience. They emphasise that employees need to believe in the need for change before they can get on board, they need to see and feel the need. Otherwise design-led projects that do not engage employees, will end badly due to a lack of enthusiasm and ownership, disinterest and even opposition. Many authors have come across a silo approach where employees are not encouraged to think outside their own specific activities and in order to change this, Design Thinking will need to "permeate to the core" while encouraging initiative and risk-taking (Parker and Heapy, 2006; Wechsler, 2012).

2.8.3 Co-Design
Co-Design is a collaborative process which brings a group of people together to define a problem and develop a solution to solve that problem in a collective way. Rather than being a rigid methodology, its aim is to be inclusive and participatory where people are welcome at any stage of the design process. Co-design is the creative collaboration (Steen et al., 2011) that happens during a design-led change project and is critical to understanding a service from multiple viewpoints. It is the co-design facilitator's job to galvanise the participants while managing the expectations of the group. The facilitator or co-designer will generally lead the way for open discussion of ideas with freedom from constraints. In a co-design environment, everyone is equal and everyone's ideas count. People are encouraged to think differently, communicate and share. Sanders and Stappers (2008) see co-design as the fusion of designers and

non-designers working together in an innovative way while Steen et al., (2011) highlight that it is essential to acquire a combination of the various viewpoints in order to understand all aspects of a service, from both user and customer perspective.

There are many benefits of co-design which primarily centre on the fact that, the more involved people get, the more motivated they become to get involved. Dervojeda et al., (2014) highlight benefits such as increased customer satisfaction, improved innovation practices, processes and skills. They stress that bringing together many multi-disciplinary experts can result in flawless services. Intriguingly what co-design does best is the integration of ideas from unexpected sources which increases the knowledge of the system for all participants. This exchange of ideas across silos should be cultivated to produce radical changes and shifts in people's assumptions and expectations. In a report from the European Commission (Droll, 2013), the main barriers to innovation in an organisation are attributed to a lack of tools and methods and a lack of collaboration, co-creation and co-design, which enriches communication and continuous dialogue between participants across the organisation. Boyle et al., (2010) stress that the benefits of co-design are often lost as they can be difficult to capture and account for, and span several departments. Many benefits are qualitative and related to experience rather than just distinct numbers.

In spite of the many stated benefits, co-design poses many challenges for the people steering it. Getting people to engage in creative thinking, in addition to continuously motivating participants throughout a project, can be difficult. Despite that, Fong (2003) strongly believes that bringing normally disjointed stakeholders together is an important journey towards knowledge creation. Building relationships and gaining trust are fundamental to the success of any design-led project. Steen et al., (2011) recommend associating the benefits of co-design activities with the project objectives. It takes time to build connections and relationships with people involved in the co-design process but using this approach will lead to a more inter-connected changing system (Anderson and Ackerman Anderson, 2014). Knowledge is power and when teams work together to solve problems or issues, this knowledge can lead to innovation.

Co-design involves taking risks, and making allowances for failure can release new value. Employees should feel comfortable with a risk-taking approach, in addition to

placing their trust in the co-design process. Many authors agree that co-defining the problem is an essential part of the co-design process (Gloppen, 2009; Seelig, 2012; Stickdorn and Schneider, 2012). Too often those involved in the co-design process are in a hurry to deliver a solution, without spending time as a group defining the problem first. It is necessary to outline the right problem to solve; digging deep to understand and uncover the root cause to a set of symptoms is core to what Service Design is about (Stickdorn and Schneider, 2012).

Co-design can effectively break down the barriers of miscommunication across organisations in order to provide successful outcomes for any type of project. Albinsson and Forsgren (2005) identify that active involvement from all stakeholders' results in a stronger contribution than traditional requirements gathering, as it includes the whole relationship between stakeholders and a service. Cruickshank et al., (2012) refer to a knowledge exchange where everyone with an interest can offer something beneficial and innovative, allowing the problem to be framed in a way that is applicable for all involved. Gouillart (2014) agrees that real transformation can be achieved by jointly engaging employees and customers in a co-design process.

Akama and Prendiville (2013) articulate that co-design is not just about collaboration using a set of tools and techniques, but an openness to take-on all the influences, challenges, fears and risks that come with a change project in a culturally stuck organisation. They argue that design researchers have a duty to tell the 'swampy' (Schön, 1983) stories of what really happens when trying to change and design existing services. Indeed Akama (2009) points out that Service Design 'stories' do not document the complex realities and tend to oversimplify the human-centred and operational issues that are forefront in undertaking any design project.

Empathy is an important first step in co-design as it allows the designers and non-designers to gain a deep understanding and feeling of people's needs and issues. In understanding these requirements, stakeholders become more open to solving design challenges that are truly meaningful for the users. Battarbee et al., (2014) suggest that we improve our capability to obtain and process information when we are empathetic. People behind the delivery of a service, in particular those at the front-line, need to spend time observing things in minute detail. Stanford University's d.School advise

that in order to design for a particular group of people, you must empathise with who they are and what is critical to them.

It appears that the methods of co-design could be yet another tactic to embed Design Thinking as a bottom-up approach in a higher education institute and given the current pressure to improve the student experience, the potential impact of Design Thinking should be explored. Co-design can help to re-shape the existing culture by bringing people together to focus on the right problems in a collaborative effort. While traditionally process re-engineering was done by a small core group, there is now an opportunity to see if co-design can open the door to new possibilities and more effective process improvement.

2.9 Design Thinking Leadership

Both Kotter (1995) and Carnegie (1995) acknowledge that a good leader is one who implements change and builds on existing relationships; coaching, mentoring and helping people to achieve what they are competent to do. In an organisation that is traditionally slow to adapt, a design leader is one who can drive design-led change through empowerment and vision and cultivate creativity by embedding Design Thinking throughout an organisation (Miller and Moultrie, 2013). A change initiative can have a lasting impact when directed by a radical leader, who can empower those around them with a clear direction for the future.

Higher education institutions are currently under pressure to change, from both internal stakeholders, and external industry sponsors (Fullan and Scott, 2009; Kezar and Eckel, 2002). Every institution has a unique culture, practices and traditions, which influence improvement and success (Kezar and Eckel, 2002) and competent leaders are required in higher education to deliver continuous improvement and innovation (Fullan and Scott, 2009). Organisations of this kind can become more effective by using design techniques to influence change (Brown, 2009) but the complexity and changeability of them makes it difficult to garner a clear path (Cameron, 1978).

Facilitation, communication, good interpersonal skills and empathy are just some of the qualities required for a leader embarked on integrating Design Thinking into an organisation. Sherwin (2012) from Frog Design admits that it takes more than a

"secret sauce" to make great things happen and lists traits like bravery, curiosity, passion and the ability to apply steady constant pressure, as necessary abilities. Building trust and a common concern can influence people to collaborate, ideate and define the real problem before focusing on a solution to ultimately create more value (Carnegie, 1995; Cooper et al., 2013). Co-creation includes building the human bridges across departments and realigning the connections between people (Roser et al., 2009). Mulgan (2007) recognises that humans are sensible and are generally not willing to take risks unless authorised from the top.

In many organisations, creativity and innovation are not thought highly of in terms of delivering value (Mumford et al., 2002) so design leaders need to plant the seed of Design Thinking to encourage stakeholders at all levels to adopt design processes in some way (Thomson et al., 2012). It takes actions rather than words to create this type of influence. If people can see the benefits of these actions then they are likely to come on board and work together to create change. Communication is central to turning intention into action and encouraging people to take risks; communicating, being open, and sharing thoughts and feelings, takes time and patience (Buchanan, 2007; Lin et al., 2011). Kanter (1984) declares that people's attitudes are limited by the category in which they have been placed by the organisation. Carnegie (1995) insists that "you make them want to come along. You ride, you go and you just suck everybody else with you". Employees need to understand how Design Thinking can help them in their everyday jobs and make their lives easier. Leading a Design Thinking initiative requires incremental and continuous underpinning using champions and advocates to spread the word. Without realising it, organisations like CIT, crave a repository of design thinkers that can spread the goodwill across projects and capitalise on opportunities in every area of the organisation. In Mulgan's (2007) Four Horizons of Effective Leadership (Figure 9), he emphasises that organisations need to focus on the four horizons at the same time. What the literature does not seem to advise is how to find time to take people away from the day-to-day fire-fighting and focus more on long term change when many public sector organisations are under resourced.

Figure 9: The Four Horizons of Effective Leadership (Mulgan, 2007)

Matthews et al (2012) observe that design leadership is more than a leader with design skills or training, but someone who has an understanding of the day-to-day business and who can "synthesise opportunities across the organisation". Gloppen (2009) reiterates this and adds that design leadership is about helping to turn business strategies and visions into actual solutions. Miller and Moultrie (2013) insist that it is the design leader who needs to encourage all within the organisation to embrace the design process as a new way of "how we do things around here". Jenkins (2008) concedes that the real test for design leaders is to restyle the organisation into one that is conducive to design, not hostile and suspicious of it. He stresses that it is necessary to embark on a whole cultural transformation but often this is not possible in busy public service organisations that are struggling with resources and funding. This research will demonstrate that management need to create the space and time for design-led change if long-term benefits are to be realised.

Leaders can encourage more experimentation, and by using Design Thinking as a tool, they can develop value for customers at every touchpoint. The difficult part is getting people to believe the message and that can only come from a credible design leader, someone who has earned trust and a reputation for delivering change, based on the needs of the participants. Liedtka (2010) underlines that designers, managers and leaders need to work together, helping each other to innovate and build expertise and competency to create a modern organisation. Indeed Lockwood et al., (2012) propose that a united bottom-up approach to creativity is more important than a top-down

method and this can happen when leaders explore and take advantage of people's creativity. A leader must inspire people to think laterally and explore options in order to develop innovative services. Gloppen (2009) describes Service Design leadership as a versatile and multifaceted problem-solving method which has the power to bring value to all aspects of business.

Design leadership can facilitate change and create opportunities which allow organisations to deliver more cohesive services. The purpose of a leader is to motivate and energise employees to visualise the future. Design leaders can ensure that design is used to empower people to focus on turning that vision into reality (Best, 2006). When it comes to Design Thinking, a leader needs to inspire colleagues to start with a blank sheet of paper. Rather than trying to fix something that exists but never really worked, Design Thinking will allow people to explore all possible options and to "resist reliability" (Martin, 2009).

Design Leadership enables people to jointly create a vision and support them in using design tools to implement that vision. If we look at the perspective of using Service Design tools to innovate with regard to existing services, then a leader will enable and motivate a group to make small improvements and build on these improvements in an incremental fashion; it is keeping up the momentum that is important. This can be difficult in a higher education environment, as the academic year runs in cycles and different services are delivered at different stages of each cycle. A full year can pass by before a service needs to be delivered again, in which time the short term memory has been wiped and pain-points from the previous year have been erased.

Flexible collaboration between leaders, designers and front-line employees within an organisation will require a new mind-set and outlook that is focused on delivering benefits and value for customers through design-stimulated service innovations. There is a dearth of literature available on design leadership and the area lacks research especially in the public and higher education sectors. It is important to note that this research strives to demonstrate how design leadership can be used to effect change from any area of the organisation by generating interest, delivering valuable outcomes and instilling a sense of trust in the design process.

2.10 Conclusion

There is a shortage of literature in existence on the use of Design Thinking as a change enabler and the area lacks research and real-world examples in the public and higher education sectors. On this research journey, it is proposed to address this gap, through small incremental change projects that will deliver student-centric services. The purpose of this literature review is to identify a number of subject areas that are likely to impact whether Design Thinking can be embedded in an organisation like CIT. It was necessary to research how other organisations in the public sector have tried to be innovative, while getting buy-in from staff at all levels in order to create real lasting change.

The review focused on six key areas, and realised that in order to introduce Design Thinking and Service Design as methods for change, a leader first needs to create a vision for that change. Communicating that vision and getting employees on board is not an informal task, and the existing culture is a contributing factor to how much innovation can occur. Organisational culture plays a fundamental role in the performance of any organisation. Design Thinking can help to break down the barriers to change and integrate opportunities across the organisation. Design Thinking is a process that focuses on the user and allows a team to come up with a unique solution.

2.10.1 Flaws, Inconsistencies and Gaps

To date the literature has tended to focus on organisations that have strong and progressive leadership and understand the power of Design Thinking. Management support for any change initiative has been identified throughout the literature review as significant but it is not clear at what level management need to support such an initiative. Having an understanding of all types of problems especially those at the front-line and those that affect the student experience is a necessary first step. The key problem in higher education is that many managers are under huge pressure to leap from one operational cycle to another, with little time in between for iterative improvement. Most studies have emphasised Design Thinking as a tool to effect change but have not explained how Design Thinking can be used as a bottom-up approach to influence management thinking. The literature does not explain how to get senior management on board who have little or no experience of Design Thinking as a methodology. Influencing management to make design-related decisions is a big step towards embedding Design Thinking in an organisation.

Many authors including Tjendra (2013) tell you what you need to embed a design culture including top-down advocates, front-line employees who are empowered and fired-up, and a process champion who has a strong design motivation, but the discussion about how to do this in a higher education public sector organisation is missing. How can you gain top-down support and fire-up front-line employees at the same time? There is modest research on this topic and little existing evidence on how to embed design as an approach among public sector employees.

Many authors discuss the need to create space for staff to be innovative but this has not been investigated in enough detail in the higher education sector. There is not enough space for innovation evident in the higher education sector and this author can see this as a significant barrier. Design Thinking is becoming increasingly important to many organisations but it is a growing area and the relevance and success of these tools is not understood in every situation, especially in higher education.

The literature does not visibly reveal how to reshape the culture of an organisation by delivering quick-wins. These quick-wins can help to set out on a path towards a new and improved culture that includes a purpose and trust in a new way of doing things. "One change always leaves the way open for the establishment of others" (Machiavelli, 2002).

2.10.2 Based on these gaps, the following needs to be investigated as part of this research

This research will investigate whether Service Design can be embedded within an organisation as a change enabler and in particular using a bottom-up approach. Using a number of action research cycles, the author will assess the best way to influence change using Design Thinking. A number of experiments will be conducted to investigate if employees can adapt to a new way of working that will enhance their capacity for innovation if a physical and psychological environment are established. The author will explore how to win over both senior management and front-line staff in adopting a new design-based system of incremental and steady improvement. There is limited research of this type being done in the higher education sector and therefore it is worthy of a doctoral level investigation. The literature does delve into innovation in the public sector but as the higher education context is different, the

research topic is novel and worthy. It will discover how to create space for innovation while keeping the lights on in order to manage day-to-day administration and operational activities.

Designing change from inside the organisation seems to yield the best results, but this has not been demonstrated in the higher education sector, and thus it is important to explore if it can be done, and how best to do it. The best way of embedding change is to get senior management shouting about the change from the top, this is what the literature says but can this be done in a higher education context? Many authors suggest that the right people need to be involved for change to happen, those that are energised to deliver change and want to make a difference. What the literature does not clearly establish is how to free up those people from their daily operational duties so that they have time to focus on change initiatives and continuous improvement. Change champions are not difficult to find in an organisation of this size but it is hard for them to give structured time to a sizeable change project. Can these change champions encourage senior management to change course and try to instil a Design Thinking culture in order to help higher education institutions find new solutions to old problems?

To date the research has tended to focus on the characteristics required for change to become embedded, things like personal benefits to those involved, having a strong champion, making sure the ideas for change are relevant to the people involved. Even though many authors have written about the conditions necessary for organisational change, this research will use Service Design and its co-creation methods as a means of creating those characteristics. Therefore this research will discover if Service Design can be a highly effective approach to release those distinct qualities required for organisational change in an existing environment. Change involves making the transition to new mind-sets, practices and behaviours and a new approach needs to now be considered in the context of higher education.

Service Design as a tool has the ability to help an organisation to achieve quick-wins while building a community of like-minded "intrapreneurs" (Clay, 2013) along the way. There are many existing problems in organisations of this type that do not necessarily require large scale change but need a group of people to come together with the same goal in mind, which is defining the right problem and then solving it. The phrase

"we've always done it this way" comes to mind and one key aspect of this research will be to see how those employees who are entrenched in the day-to-day firefighting and paper-pushing, can be released in order to deliver small incremental change. Furthermore this research will investigate if Design Thinking can survive if it is only being practiced to solve short or medium term problems, and not a strategic focus of the organisation. What is clear is that delivering quick-wins will help to deliver credibility to Design Thinking as a new tool.

Overall the literature is somewhat sparse in showing how Service Design tools and Design Thinking methods can impact organisations in a positive way by delivering small process and policy changes that do not disrupt day-to-day operations and do not require enormous financial investment. This research will seek to contribute new knowledge in this area.

Part Three | DOC803 | Proposed Project Design

Chapter Three | Project Design

3.1 Introduction

The primary focus of this research is the practice of change agency to transform an organisation from inside-out using a number of small steps in the form of action research cycles. Change agency promotes innovation and communicates new ideas and behaviours to the wider organisation. It is focused on developing the need for change on the part of individuals and departments and then helping them to diagnose their problems and innovate with regard to solutions for those problems.

This chapter will address the choice of research methodology which guided decisions made along the research journey, such as what to study and the information and data required to make those decisions. The choice of methods considered by the author, in order to achieve the research objectives, was also examined. At each stage of the research, information gathered and lessons learnt influenced further action and the fostering of meaningful change.

This research was exploratory in nature and the primary objective was to explore a problem through a number of different settings in order to provide insight and understanding. The knowledge that was discovered from this research was how Design Thinking can help to make the services delivered by higher education institutions more streamlined and efficient. This research had a human focus and was concerned with understanding actor's behaviour in their own natural setting which makes it qualitative. Candy (2006) believes that there are three key features of research:

- The research must tackle a series of questions or problems.
- There must be a set of circumstances or a situation where these problems can be addressed.
- The research methods must be defined that will answer the research question.

3.2 Research Problem

At CIT there are many disparate actors, systems and processes involved in service delivery and there is an internal perception by many staff that too often employees

work in silos with little or no understanding of the personal impact of the student journey. Traditionally in large organisations, the focus is often on delivering technical solutions to existing problems while ignoring the importance of people and processes (Bailey et al., 2014). Service Design brings together people, processes, technology and culture to create a more holistic experience (Junginger, 2014). A major challenge of this research problem is the existing organisational culture and how change can be accomplished in the current setting. Changing the culture of an organisation is a monumental task and not only requires strong leadership and support but a fresh approach and an original toolkit (Martin, 2009; Sangiorgi, 2011). An existing mind-set of "we have always done it this way" could hamper any new ideas if not handled in the right way. Another problem observed from the author's existing practice within the organisation, was the lack of space and time for pursuing continuous improvement, when the goal is always to keep things ticking over. Employees are stretched to even perform their daily activities, leaving little time to experiment with new tools and prototype new ideas.

This research problem was sufficiently challenging and worthwhile and provided insights that have the potential to impact on practice across the higher education sector. It is likely that many third level institutions, both in Ireland and around the world, experience many of the same administrative and operational issues (Fullan and Scott, 2009; Kezar and Eckel, 2002).

3.2.1 Research Question
Initial research conducted in 2013 involved a pilot project, RECAP, which used Service Design tools and techniques to review a section of the Student Lifecycle and implemented a number of quick-wins to improve the existing induction experience for part-time students. This initial project led to the authors desire to seek out more knowledge and real-life application of Service Design starting with a literature review. It also paved the way for further research in the author's organisation and preceded the development of the following research question:

> *To assess how Design Thinking can be used as an approach to analyse and improve services at each stage of the Student Lifecycle and embed this approach as a long-term sustainable change enabler in the higher education service system.*

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3.2.1.1 Sub-Research Questions

1. How can Design Thinking influence existing culture in higher education?

2. How can leadership support, or hinder, the design process as a new way of working?

3. In what ways can Service Design tools and techniques help an organisation be collaborative and innovative?

In order to understand the research design, the Kipling questions (Trafford and Leshem, 2008) were used to help define the research objectives:

- What is it that you want to discover?
    - To discover how Design Thinking can be used as an approach to improve the student experience.

- Why do you want to investigate it?
    - Up until now, the silo-based approach to solving problems did not consider the student experience as part of the solution and this new methodology or way of thinking could help to simplify CIT's processes and communicate better as an organisation.

- When is the investigation to be conducted and over what period?
    - A pilot project began in April 2013 and a number of action research cycles followed this cycle in order to assess the sustainability of this approach.

- How do you intend to investigate the topic?
    - Small innovations delivered using short project cycles will help to build trust and embed Design Thinking.

- Where is the topic located and where is it to be investigated?
    - Design Thinking will be used as an approach in one institute, CIT, and across all four campuses and a number of services and departments.

- Who are the respondents from whom data are to be collected?
    - Students and staff at CIT.

3.3 Research Paradigms

In discussing research, one often talks about qualitative and quantitative methodologies but it is also necessary to deliberate paradigms; the beliefs and perceptions about the nature of knowledge and its existence. Researchers will often identify with one paradigm over another; this often depends on the research question.

A paradigm is a way of thinking about the world and it comes from our background and experience; how we see the world and not how the world is. It is based on ontological, epistemological and methodological belief systems. A paradigm is a mental image of the way things are and comes from people's backgrounds and experiences. All of us think we see the world as it is; we see the world as we are (Covey, 2014).

A researcher's ontological and epistemological assumptions influence:

- Selection of the research topic;

- Construction of the research question; the researchers background, its influence on the topic and how this influences the practice-based change through day-to-day projects and tasks;

- How the research will be conducted; the strategy used to undertake the research and how the research will be completed in a structured way;

- What methods will be used; the tools that will be chosen to collect data; *and*

- The design of the research; which involves a critical thinking process to decide how research will be undertaken.

Researcher bias can mean that our own observations are not always accurate so it is important to find ways to ensure these opinions and beliefs are as close as possible to reality.

3.3.1 Ontology

Ontology is related to one's beliefs about reality. Epistemology and methodology are driven by ontological beliefs.

- What is true?

- What exists?

- What is real?

Generally a researcher develops a plan to conduct research based on what the researcher wants to know, to understand something and answer a research question. There is more than one way to interpret a situation so this research is aligned with a qualitative or constructive paradigm; reality is constructed in the context. The author is a relativist and believes in the importance of talking to people to get a better understanding of their story; closely linked to empathy in Design Thinking. Largely subjective meaning is sought, rather than the truth, which means the researcher's views are usually based on personal feeling, taste and opinion. Reflective practice will be undertaken with regard to the values and objectives the author brings to the research and how these affect the research project, discussed in part six, chapter thirteen.

3.3.2 Epistemology

Epistemology refers to how we get to know what we know and is more philosophical in nature than methodology. The author's role as a business analyst within the organisation naturally understands that people are the most important aspect to re-engineering an existing process or implementing a technology solution, and the experiences, perceptions and realities of the large diversity of stakeholders is extremely significant. Leveraging collaboration and participation from all those involved in using and delivering a service, results in a more holistic experience for both the service users and staff at the front-line.

Figure 10: Author's relationship with the research topic

3.4 Methodology

Methodology refers to the way we go about discovering knowledge and the way research is organised is influenced by ones ontological and epistemological beliefs. Methodology is the connection between our philosophical view (on ontology and epistemology) and method (perspective and tool) (Hesse-Biber and Leavy, 2010). The author criss-crosses this bridge throughout the research process and recognises how the choice of methodology serves as a strategic and flexible guide throughout her research experience (Hesse-Biber and Leavy, 2010). Research is a holistic process and everything from the selection of the research topic to understanding one's own belief systems will have an impact on the methodology.

3.4.1 Research Approaches

Theory is a set of ideas meant to explain a particular topic and there are a number of approaches to using theory. Trafford and Leshem (2008) describe the options available to the researcher as analysis of theory through deductive approaches, the advancement of theory through inductive approaches or a mixture of inductive and deductive styles.

Logic provides researchers and designers with the reasoning to draw a necessary conclusion. Deductive logic is the process of drawing an essential conclusion from a set of foundations which are given to be true. The researcher starts with a statement or question and the research aim is to answer that question. Inductive logic generates a conclusion from a set of data, primarily used where little research exists on a topic. Both deductive and inductive logic allow the researcher to declare something to be true or false at the end of the process. Martin (2009) describes abductive logic as "the logic of what might be". Furthermore, Kolko (2009) observes that abduction can be thought of as the theory that makes most sense based on previous experience, observations and data gathered.

As this research will involve a number of interventions and then making sense of the meaning of the outcomes, abductive logic is most suitable as it allows for the generation of new knowledge, understanding and insight. Dorst (2010) maintains that when discussing Design Thinking, the basic reasoning pattern is abduction as the researcher is attempting to create value for others (Figure 11 and Figure 12).

Figure 11: Abduction (Dorst, 2010)

Figure 12: Abduction in relation to this research

Abduction is most often associated with solving existing problems. Using Design Thinking to effect change in an organisation means that the researcher is not just solving an existing problem but trying to reframe that problem and define the right problem to solve. Abductive logic is necessary for innovation to occur where creative and intuitive thinkers can use their feeling and perception to deliver valuable outcomes. The American philosopher Charles Sander Peirce who coined the phrase *abduction* believed that new ideas did not come from traditional forms of logic and he posited that new ideas resulted from a thinker examining data. A researcher that is using Design Thinking to create change is constantly looking for new insights, challenging why things are the way they are and suggesting new domains. Brown (2009) concludes that designers use the tools of abductive reasoning to seek a balance between consistency and validity, between discovery and manipulation and between instinct and analytics.

3.4.2 Action Research

There are four main qualitative research methodologies: Survey, Case Study, Grounded Theory and Action Research. Other research methodologies such as Ethnography, Case Studies and Grounded Theory were not considered suitable for this research project as they are primarily concerned with inquiry and observation over time, studying a group, event, process or institution but not instigating any action or change. Blaxter et al., (2006) define action research as an ideal methodology for those

conducting research in their own organisation and working with people in order to solve a particular problem. It involves observing what is going on around you and then reflecting and observing one's own actions and how they influence the research outcomes. Shani et al., (2007) describe action research as the combination of existing organisational knowledge, an inquiry process and behavioural science knowledge, all coming together to solve real-world issues. Coghlan and Brannick (2014) say that action research has a few broad characteristics namely that it is a collaborative sequence of events and research *in action* with the end goal being to solve a problem.

The author chose action research as the research was focused on generating solutions to tangible and intangible problems (Koshy, 2005). As an agent of change, it allowed the author to generate meaningful outcomes and improvements while being participative and collaborative. It added some deliberate reflection to practice and action that was already happening and therefore increased the learning of the author and the organisation.

Each action research cycle involved a number of participants and the results of each cycle are not just based on the author's views, opinions or interpretations but based on all those that contributed to each cycle of change. The function of the author in the context of this action research was to assume many different roles during the research project such as planner, leader, designer, change agent, observer, listener, facilitator, synthesiser, reporter, innovator, communicator, influencer and co-creator.

3.4.3 Insider Research

When a researcher is inquiring from the inside, they are immersed in the action and the situation that is generating knowledge (Coghlan and Brannick, 2014). Coghlan and Holian (2007) describe insider research as an employee in an organisation taking on a research role in addition to their day-to-day functional role. It is certain that the insider will have an awareness and understanding of the organisation from their time there.

Developing one's own practice and the practice of the organisation in which one is immersed is the main focus of action research. Practice-based research is a unique examination in order to gain new knowledge by means of practice and the outcomes of that practice (Candy, 2006). Practitioner research or insider research is when an individual takes on a dual role; a practitioner and a researcher. It looks to make

collaborative change by means of participation and action. The researcher is inside the situation and will have an influence on the outcomes whereas traditional research is generally conducted from the outside. There are three essential parts that provide depth to insider research as described in Figure 13, the people, the organisation and the researcher on the inside. The insider has an awareness of the people; their behaviours, personalities and styles, along with an understanding of the complexity of the organisation's culture, procedures and processes. This allows the insider to undertake research that is relevant to the needs of the organisation.
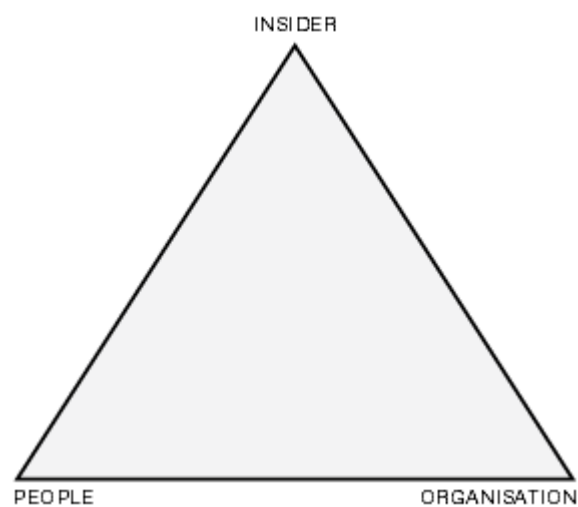
Figure 13: Key elements of Insider Research (Galea, 2009)

McNiff and Whitehead (2009) identify that there are two aims of insider research; the personal aim of the researcher who wants to improve their own learning and the social aim of stimulating other people's learning and refining their behaviours. If action research is primarily concerned with improving learning rather than behaviour then this research will focus on improving learning in a number of ways. By facilitating both organisational and individual learning and linking both professional and personal learning, the focus was to transform the organisation and the researcher, and positively impact all participants in some way, even if that was just an exposure to new tools and techniques.

Action research is different from professional practice in that it identifies reasons for the action whereas professional practice does not always question the reasons and motivations (McNiff and Whitehead, 2009). Costley et al., (2010) explain that as an insider, the researcher is in a unique position to study a situation or problem in depth

but also has the insider knowledge which puts them in the crucial setting to investigate and make changes. Both the researcher and the organisation will go through a learning process throughout the time of the research project.

3.4.4 The Researcher as an Agent of Change

The change agent in this case is the author that facilitated a change process using a number of tools and techniques. If the need for change comes from the researcher's practical experience and knowledge as opposed to the collective organisation's experience then the following challenges ensue:

- Institutional hierarchies and decision-making that is politically based;

- Difficulty engaging individuals, teams and the organisation in the change process;

- The importance of the researcher allowing the organisation to find its own answers rather than being the one with all the answers; this is essential for change to stick;

- Trying to internalise new culture in the organisation;

- Being inclusive of the divergent interests of all stakeholders;

- Gaining support from middle and front-line managers;

- Realisation of the complexity of cross-departmental change; *and*

- Securing time and resources to deliver the change, in addition to allowing time for creativity and innovation to take place.

Social situatedness is a concept developed by Vygotsky in 1962 and results from the interaction between the researcher, the situation and the context. All three will affect the way a piece of research is conducted. The author's position within the organisation, their relationship with the participants, the culture of the organisation, and the background to the research problem all had an impact on the research undertaken and the outcomes achieved.

3.5 Research Design

The research was undertaken over a period of four years and the pilot project began in March 2013 as outlined in Figure 14. It was through learning about the possibilities of Service Design from the pilot project that the author realised the research possibilities and decided to enrol on a professional doctorate programme in January 2014.
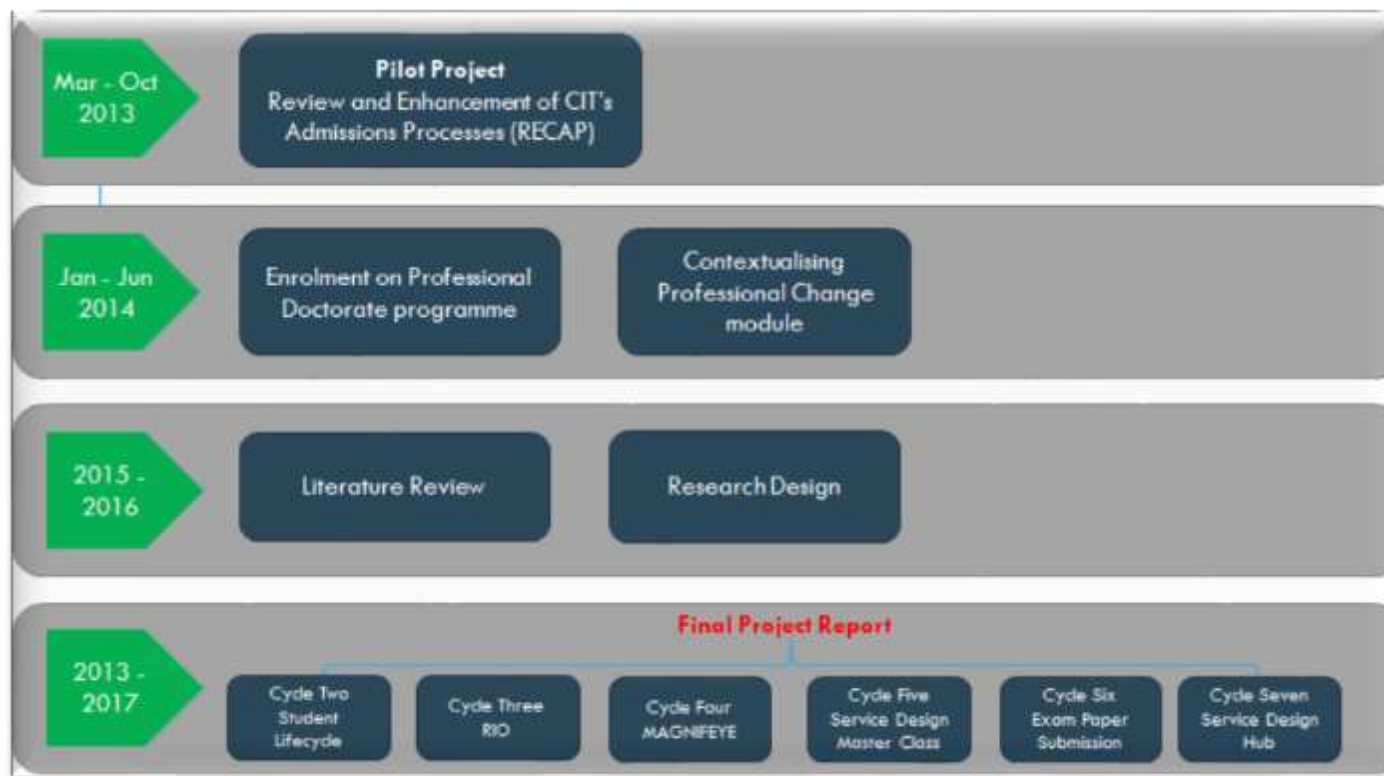
Figure 14: Timeline of research

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3.5.1 Research Timeline

Tables one to seven set out the objectives, outputs and learning that resulted from seven cycles of action research. It provides a high level overview of each cycle and how one cycle influenced the next cycle. It also highlights the rigor of the authors own learning and interaction with peers at conferences and events. Each cycle will be discussed in separate chapters but the following section is intended to set the overall scene.

March 2013 to October 2013	RECAP Pilot Project
Objectives	To improve the induction stage of the Student Lifecycle for new part-time students.
Outputs	While improvements were focused on the part-time student, many positively impacted the whole student population. Changes included many artefacts such as a new campus map, a "QuickStart Guide", "how-to" videos and extended opening hours of key services for part-time students.
Learning for next cycle	Service Design tools and techniques were introduced and had a positive impact on student experience. What was lacking was a framework to help organise, improve and deliver services around the students and employees; a Student Lifecycle. It was clear that more ownership of key services was required by business owners.
Literature reviewed and researched	**Topics:** Service Design tools and methods, Double-Diamond design process. **Authors:** Shostack, Moritz, Sangiorgi, Bailey, Bitner et al; **Organisations:** Design Council, Service Design Network, JISC, Stanford d.School.
Author interactions and publications	The author presented at: • Service Design Network Conference, Cardiff, November 2013. Presentation title: "Normally.....We Assumed....Nobody Told Us"

	• HEAnet Conference, Athlone, November 2013. Presentation title: "An Innovative Approach: Service Design in Higher Education"

Table 1: Cycle one objectives, outputs and learning

November 2013 to May 2014	Student Lifecycle
Objectives	To identify the stages of the CIT Student Lifecycle which could be used as a tool to help CIT organise and deliver student-centred services.
Outputs	The primary output of this cycle was a map of the student journey from prospect to alumni, which could be used as a framework to analyse and improve the student experience and to influence CIT's strategy and prioritise projects.
Learning for next cycle	For the first time the CIT student journey was mapped from prospect to alumni, including all the *touchpoints*, opportunities and emotions that are part of that journey. It was realised after this cycle that there was a need to refine internal processes, identify issues and opportunities across all stages and engage staff in co-design projects to do so. It was also necessary to revisit the cycle one to formally look at induction for all students as one streamlined service.
Literature reviewed and researched	**Topics:** Embedding Service Design, employee engagement, organisational culture, *customer journey mapping*, user experience. **Authors:** Brown, Martin, Smith and McKeen, Junginger, Beckman and Barry.
Author interactions and publications	The author presented and published a conference paper at ServDes 2014, Lancaster University, UK. Presentation title: "Transforming Student Services in Higher Education".

Table 2: Cycle two objectives, outputs and learning

May 2014 to September 2014	RIO: Registration, Induction, Orientation
Objectives	To increase the number of students receiving a streamlined registration, induction, and orientation experience at CIT.
Outputs	Many of the outputs from this cycle were in the form of insights and observations from the existing induction process for full-time undergraduate students. Photographs, informal interviews, feedback from Student Leaders and queries captured by front-line services were all analysed.
Learning for next cycle	There are a number of factors that need to be in place in order to streamline services across silos; management support, a business owner or lead, better communication between all stakeholders and a focus on improving the back-stage processes, which in turn will improve the student experience.
Literature reviewed and researched	**Topics:** Organisational change, Design Thinking, design-led change, design leadership, change champions, public sector innovation. **Authors:** Gloppen, Buchanan, Hammer and Champy, Kotter, Kanter.
Author interactions and publications	The author recruited a student Intern to work on various projects and attended a number of seminars including a one-day Design Thinking Master Class at University College Dublin and "Winning by Design", a seminar hosted by Logitech in Cork.

Table 3: Cycle three objectives, outputs and learning

November 2014 to September 2015	Magnifeye
Objectives	To map the back-stage processes of the induction phase of the Student Lifecycle, identify the right problems and develop some solutions.

Outputs	The outputs included a central repository for documentation of all backstage processes and scripts, definition of problems, weaknesses, opportunities, quick-wins for September 2015 and recommendations for September 2016.
Learning for next cycle	Service Design tools can be effective across a broad range of projects. Some tools work better than others and it is figuring out what works for different scenarios is part of the learning process.
Literature reviewed and researched	**Topics:** Co-design and co-creation, public sector culture, culture and innovation, design for growth. **Authors:** Liedtka, Martins and Terblanche, Mulgan and Albury. **Organisations:** Snook, IDEO, Design Council, NESTA, EU Commission.
Author interactions and publications	The author attended FaceMooc, a five-week online course in co-design hosted by Lancaster University and used the Magnifeye project as an example project for the course. A proposal for funding to host a Service Design Master class in Cork was submitted to Irish Design 2015.

Table 4: Cycle four objectives, outputs and learning

October 2014 to March 2015	Service Design Master Class
Objectives	To provide formal Service Design training to CIT staff as a step towards embedding this new way of thinking and doing across the organisation.
Outputs	An introduction to Service Design tools and techniques for a broad range of stakeholders. The event created a buzz in CIT and an interest among staff who could see the practical application of Service Design to their everyday work problems.

Learning for next cycle	It heightened employee's awareness of the need to co-design services, with the users of that service. It was also realised after this cycle that ongoing support and guidance would need to be provided to the various departments that were interested in exploring new tools and techniques. The setup of a unit to guide and mentor process change initiatives was needed.
Literature reviewed and researched	**Topics:** Process improvement, Lean improvement, internal collaboration, design facilitation, customer experience design, design-led organisations. **Organisations:** St. Andrews University, Central Statistics Office, Philippe Collumbe from Where To From Here.
Author interactions and publications	The author attended the SPIDER[14] Public Sector Service Design Conference, Cardiff, January 2015.

Table 5: Cycle five objectives, outputs and learning

May to August 2015	Exam Paper Submission Project
Objectives	To engage more stakeholders and project managers in using Service Design as a tool to transform a broad range of services and to transform CIT's existing exam paper submission process.
Outputs	The first output from this phase was the final *Service Blueprint* highlighting the *fail* and *wait* points of the existing process. All the data that was gathered and analysed was summarised in a report sent to senior management.
Learning for next cycle	It is better to report on the first phase of a project (discover and define phases), present it to management and then wait

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[14] SPIDER was a European project about Service Design that ended in 2015. A toolkit was developed as an output from the project. http://www.thespiderproject.eu/

Literature reviewed and researched	**Topics:** Bottom-up change, role of the designer, measuring outcomes, design-led organisations. **Organisations:** Interviews with universities that have implemented Process Improvement Units: Universities of Sheffield, Strathclyde and Edinburgh, University College Dublin, Royal College of Surgeons in Ireland.
Author interactions and publications	The author presented and published a literature review paper at Ireland International Conference on Education (IICE-2015), and the same paper was selected for publication (with amendments) in International Journal for Cross-Disciplinary Subjects in Education (IJCDSE), Issue Volume 6, Issue 4.

Table 6: Cycle six objectives, outputs and learning

March 2016 to March 2017	**Service Design Hub**
Objectives	To build internal capability for designing user-centred services across CIT.
Outputs	Senior management acknowledged that a central resource for process improvement was important for transformation of services across the Institute. The author presented a proposal for such a hub to a Senior Staff breakfast in April 2016.
Learning for further work	Top-down leadership, support and buy-in are necessary for an initiative like this to gain the recognition it deserves, which in turn could have a waterfall effect on the rest of the organisation.
Literature reviewed and researched	**Topics:** Public sector innovation labs, internal Design Thinking capability. **Organisations:** Alberta CoLab, Lab @ OPM, Y Lab, Nesta, Mind Lab.

Author interactions and publications	The author published two journal papers: • Iterations Design Research Journal, title: "Moving Towards User-Centred Services in the Public Sector". • Swedish Design Research Journal, title: "Using an Action Research Approach to Embed Service Design in a Higher Education Institution". The author also attended the SPIDER Public Sector Service Design Conference, Dublin, June 2016 and a Design Thinking seminar in UCC, Cork.

Table 7: Cycle seven objectives, outputs and learning

3.5.2 Research Methods and Tools

The following sections are divided into "before", "during" and "after" the action research cycles; the preparation that went into each cycle, the research methods and tools used within each cycle (Figure 15) and the steps taken to document the cycles at the end. Figure 16 shows the participation across all departments in CIT throughout the seven cycles.

		Action Research Cycles						
		1	2	3	4	5	6	7
		RECAP	Student Lifecycle	RIO	Magnifeye	Service Design Master Class	Exam Paper Submission	Service Design Hub
Service Design Tools	Action Plan	●			●		●	
	Co-Creation	●	●	●	●	●	●	●
	Cognitive Walkthrough			●				
	Contextual Interviews	●		●				●
	Customer Experience Map	●						
	Customer Journey Maps		●					
	DeBono's Positive Minus Interesting			●	●			
	Fishbone Diagram	●						
	Framing Research questions				●	●		
	I wish…..(What If….)				●			
	Idea Generation	●	●	●	●	●	●	●
	Ideation Idea Selection					●		
	Ideation Lotus blossom					●		
	Issue Cards (Wall of Pain)						●	
	Mindmap					●		●
	Personas	●	●	●		●		
	Service Blueprinting	●			●		●	
	Service Concept User journeys					●		
	Service Prototypes	●		●				●
	Shadowing	●		●			●	
	System Map				●			
	Touchpoint Inventory		●					
Action Research Methods	Brainstorming	●	●	●	●	●	●	●
	Content Analysis	●	●	●	●		●	●
	Document Analysis	●		●	●		●	●
	Facilitation	●	●	●	●	●	●	●
	Group Discussion or Focus Group	●	●	●	●		●	●
	Interviews	●		●			●	●
	Log Book	●		●			●	
	Observation	●		●	●		●	●
	Photographs	●	●	●		●	●	●
	Surveys	●				●		
	Workshops	●	●	●	●	●	●	●

Figure 15: Matrix of action research methods and Service Design tools used across the action research cycles

	Action Research Cycles						
	1	2	3	4	5	6	7
	RECAP	Student Lifecycle	RIO	Magnifeye	Service Design Master Class	Exam Paper Submission	Service Design Hub
Student Services						1	
Admissions	6	1	1	2			
Exams Office		1			1	6	
ID Card Office	1					1	
Fees Office	4			2			
Postgraduate Office			1				
Sports and Societies					1		
Access Service			1		1		
Disability Service			1				
Mature Student Office			1				
Administration							
Registrar's Office						1	
Marketing	2						
Student Engagement and Retention	2	2	2		1		
Office of VP for Finance and Admin					1		1
Human Resources							4
MTU Project Office							1
Finance							3
Staff from IT Tralee							4
Caretakers	2						
IT Services							1
IT Applications	5	2		9	1	3	
IT Operations	4	2		11	1		
ServiceDesk				2			
External Affairs							
Office of VP for External Affairs							1
Extended Campus	3	2			1		
International Office			1				
Erasmus Office	1		1				
Academic Departments							
Accounting and Information Systems	1	2			2	1	1
Architecture					1		
Biological Sciences						2	1
CAMMS	2						
Civil and Structural	1					1	1
Computing	4					1	1
Cork School of Music	1	2					
Craft Studies			1				
Crawford College of Art and Design	1						1
Electrical and Electronic						2	
Faculty Engineering and Science	1						1
Management and Enterprise							1
Marketing and International Business	1						1
Mathematics						4	
National Maritime College	1					2	
Nimbus Research Centre					1		
Organisation, Professional Development	4		2	1		2	1
Physics	2					1	
Process, Energy, Transport	5					3	
Total Staff	**54**	**14**	**12**	**27**	**12**	**31**	**24**
Student Population							
Student Leaders			25				
Student Interns		2	2			1	
Students	18	200+			7		
Students' Union	2	2	1		1	1	
Total Students	**20**	**~204**	**28**		**8**	**2**	
External Participants					**33**		

Project Participation and Workshop Attendance by CIT Staff and Students

Figure 16: Project participation and workshop attendance by CIT staff and students

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3.5.3 Pre-cycle: Preparation

For each cycle, careful consideration was given to a number of factors in order to ensure each project got off to a good start. The activities done in advance and in support of each cycle were critical to determining the success and outcomes of each cycle. This involved setting up a core project team, a governance group in some cases, setting the scope of the work and outlining any risks or issues that would be faced along the way, including other tangible and intangible influences, some of which are exampled below.

Influence	Requirement	Example
People	Getting the right people into workshops who can validate or reject findings means that the research is not solely dependent on the author's own discoveries. Identification of key stakeholders and including them throughout the various cycles was critical and resulted in active involvement from many people right from the start, to co-define problems and co-design solutions.	The project team for cycle one, RECAP, was handpicked by the project sponsor and the author as it was necessary to have key staff from the Admissions area. For the second cycle, RIO, anyone involved with registration, induction and orientation was invited to a workshop and interviewed, whereas for cycle six, the Exam Paper Submission project, an open invitation was sent to over 800 academic staff in order to yield a cross-section of stakeholders from various departments.
Environment	A collaborative project space, plenty of light and air, with the ability to move tables, was required in order to provide flexibility and space for collaboration in each workshop. Plenty of blank walls, whiteboards, large sheets of paper, post-its and markers are key	When planning and organising the fifth cycle, the Service Design Master Class, a number of city centre spaces were researched by the project team. As the organisers wanted to create some publicity for Service Design in Cork and the design challenge was a "take-away coffee" experience, it was necessary to find a central location like CIT's

	attributes of Design Thinking and became the norm for those participants attending workshops.	Wandesford Quay Gallery, where participants had easy access to interact with and observe members of the public.
Time	Carefully choosing the location and time of workshops helped to ensure that essential stakeholders attended each event. Moreover it was vital to have more than one workshop and a variety of time slots to choose from. It was realised after the first cycle, through discussion with various managers that two to three hour workshops seemed to be the maximum amount of time people were willing to contribute from their day.	RECAP's focus groups for part-time students were organised in the evening after working hours to enable the attendance of those students working a 9-to-5 day. For the Exam Paper Submission project, three workshops for academic staff were organised on different days at the end of term when the lecturing schedule was complete.
Tools	Selecting the right tools for each project and trying them out beforehand with a sample group, proved that certain tools suited certain groups of people and certain contexts.	At the start of cycle four, the Magnifeye project, the Fact and Root Cause tool from the SPIDER project was adjusted to suit the needs of the IT Services team and elicited 59 insights and an understanding of the frustration experienced by staff at the front-line.
Workshops	Each workshop was carefully planned and the agenda was designed to get participants to think more critically about the problem that needed to be solved. As participants were giving up valuable time to attend a workshop, it was important to wisely plan	The agenda for the first two-hour workshop for cycle two, the Student Lifecycle was as follows: **Create a Student Journey Map or Lifecycle** • 14:15 – 15:00 o List all possible *touchpoints*

	the purpose and outcomes of each workshop, and design the agenda based on that. It was also necessary to set the end-time of the workshop a bit later than expected as occasionally people switched off before the end of a two-hour session.	- 15:00 – 15:30
		  o Group the *touchpoints* into steps of the student journey
		  o Label each step
		- 15:30 – 16:00
		  o *Persona*[15] walkthrough

Seeking advice and guidance	Although the research was always considered to be an internal capability delivering change, now and again it was prudent to seek advice and guidance from experts in Service Design, co-design and Design Thinking. This would ensure that although the research was performed by the author as an internal practitioner, at times it was directed and reviewed by experienced external specialists.	For the first cycle, RECAP, as CIT were just starting on a new journey and learning a new toolset, it was suggested by the author and approved by senior management to employ an external facilitator for three days from the University of Derby based on their JISC Enrolment project and experience of using Service Design tools in a university context. Similarly when, starting out on the Magnifeye project, the author enrolled on FaceMooc, a five week online course in co-design with Lancaster University. The author was better equipped to run the Magnifeye project based on insights and advice from two experts, for example, taking the time to acknowledge the frustration of IT Services staff in order to get them on board.

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[15] A Persona is a tool used to create a fictional character that represents a typical user or customer.

3.5.4 Mid-cycle: Research Methods and Research Tools

In order to gather and analyse all the qualitative data for the purpose of this research, a number of methods were adopted. Due to the highly responsive and cyclical nature of action research, the understandings and insights developed in early cycles, impacted the later cycles. The research question and methods were refined during the reflection stage of each cycle. Action research allows for vague early stages which will eventually lead to applicable conclusions.

Different research methods and tools were used during multiple action research cycles in order to assess the progress of embedding a new way of thinking and working in this organisation. Each cycle looked at a different area of the organisation, in a different way using a variety of methods and tools, while continuously learning from the previous cycle. The choice of research methods determined how the research was conducted, the strategy and approach used and the techniques that were employed. Figure 15 documents the full list of action research methods and Service Design tools used throughout the research. A number of tools are referred to throughout this thesis and individual explanations of each tool can be seen in the Glossary at the beginning of the thesis.

3.5.4.1 Research Methods Used Within Each Cycle
When talking about methods used throughout this journey, it is referring to the action research methods that were used, such as document collection and analysis, participant observation, surveys, interviews and focus groups. The combination of these methods integrated with Service Design tools provided a powerful way to collect data. An example is that although focus groups may not tap into emotions (Krueger and Casey, 2008), using a tool such as *Customer Journey Mapping*[16] during a focus group can help to empathise more with the user journey. In fact Whicher et al., (2013) highlight that Service Design tools allow better insights into customer behaviours, improve engagement with users and provide a more human element to the action research.

Figure 17 demonstrates the overlap between qualitative research methods and Service Design tools and techniques and although the two approaches are not on

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[16] Customer Journey Maps are diagrams that represent the whole interaction of the customer with the service, including thoughts, feelings and emotions.

equal grounds, they do complement each other. *Brainstorming* as a tool, fits under the description of both an action research method and a Service Design tool and is also used to facilitate idea generation and feedback, when combined with De Bono's *Positive Minus Interesting (PMI)*[17] tool. Workshop facilitation is a research method and skill that has to be learned and improved in order to get the best out of the participants. Workshops are also used to bring people together to use Service Design tools effectively such as *Service Blueprinting*, *Customer Journey Mapping* and *Personas*. These tools require co-creation and would not usually be used in isolation or by single individuals. In essence, all the methods and tools are linked and complemented each other during each cycle. The Design Thinking process acted like the spine through the action research cycles; applying the toolkit and wrapping action research around it.
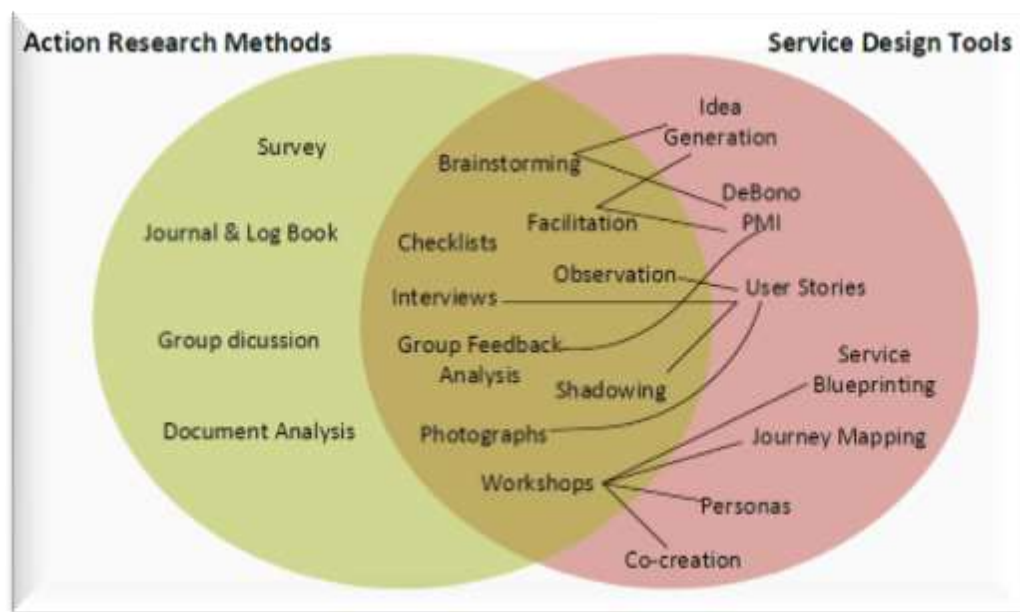
Figure 17: Overlap of action research methods and Service Design tools

3.5.4.2 Research Tools Used Within Each Cycle
There exist many toolkits that enable groups to work together to create solutions, the Collective Action Toolkit from FROG Design, Double-Diamond from the Design Council, Stanford d.School Methods and the Service Design toolkit from the SPIDER European project. Although a methodology and toolkit are not essential for designing

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[17] A thinking technique to find the *Positive, Minus and Interesting* points about a particular situation or problem. It is very useful to capture input or feedback from a large group in a structured way. It gives all participants a voice and keeps the agenda moving without getting stuck in one particular area.

a new service, they do provide a framework for being more open and collaborative and can be used in conjunction with existing practices. Tools such as *Customer Journey Mapping* and *Service Blueprinting* represent the existing journey of a user while *Personas* and *Stakeholder Maps* help to build a profile of a typical customer.

The Double-Diamond from the Design Council was adapted and used as the Design Thinking process for each cycle (Figure 18). There are four key stages in the Double-Diamond process and another two stages were added by the author as follows:

- Initiate: agree the project outline and scope of work and establish a project team
- Discover: research the problem, gather data, observe stakeholders
- Define: start to identify themes and define a specific problem
- Develop: develop ideas into prototypes and solutions
- Deliver: deliver actions and improvements
- Reflect: consider what worked, what did not work and what could be improved for the next cycle

Figure 18: Design Thinking process

For cycle one, the project iterated through each stage in Figure 18 and delivered some valuable outcomes. For cycle three and six, both projects reached the end of the define phase and concluded by defining the specific problem to be solved along with some actions and next steps. This process model resulted in purposeful fact finding,

focused questions, a better understanding of existing issues and discussion of insights and options. Taking time during the early stages of "discover" and "define" also rose to uncovering aspects of a project that otherwise might not have been exposed and encouraged participants not to rush to a solution too early. In fact, delivering a solution in cycle three and six may have ended in failure, if time was not spent gathering data at the beginning.

Each cycle involved taking existing tools and tweaking them to suit the needs of the project, for example the *Service Blueprint* was primarily focused on the front-stage for the RECAP project and on the back-stage processes for the Magnifeye project. The decision or preference for one tool over another or what combination of tools to use, came with experience as the cycles progressed. Some tools were used a lot, for example, *Service Blueprinting* and *Personas*, and some tools were only used once, such as *Ideation Lotus Blossom*[18], as it was not easily understood by users and did not deliver the expected outcomes. This was a significant learning for both the author and the organisation, that involved gaining knowledge and expertise in deciding what works in what situation.

3.5.4.3 Data Collection

Data was mostly collected using less formal, unstructured methods and techniques. Many of the Service Design tools were incorporated into the research and used as the primary data collection method. These included workshops with stakeholders, to perform activities of co-designing, envisioning, testing, prototyping and implementing using various tools and techniques. Data included words, images and objects and was analysed in an interpretive manner. It included flow diagrams mapped out on whiteboards or large sheets of paper. The data that was derived was mainly through sensory observations and impressions of experiences and events. Specific detail about how data was collected for each cycle is described in chapters four through ten.

3.5.4.4 Data Analysis

Analysis of the data from all cycles involved finding common words and phrases and looking for themes or categories of data. During each cycle, data and outputs from

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[18] A tool used to demonstrate how to flesh out important design requirements and the characteristics of those requirements.

workshops were firstly captured using photographs. Transcribing the data into spreadsheets in order to find codes, patterns and themes, included the following steps:

- Studying the outputs from each workshop

- Finding and organising ideas, concepts, themes

- Searching for frequently used words and phrases

- Listening to stories during the workshops and capturing these for later analysis

- Summarising quotes, feelings, thoughts

- Capturing feedback from participants in workshops; Student Leaders, service delivery staff

- Capturing feedback in a number of ways; via email, phone-calls, meetings and water-cooler moments

For the workshops that took place in each cycle, the same tasks were often completed by a number of stakeholder groups. The outputs were then compared and contrasted both in terms of the value of the data and to condense the workshop outputs into a summarised format. As the workshops were quite intensive, many of the insights were realised in project meetings after the event when the project team were analysing the outputs and had time to study each piece of the puzzle.

3.5.5 Post-cycle: Documenting the Cycles

For each action research cycle, a similar process was undertaken; data was collected and analysed, action was taken and that action was then reflected upon. In order to document the rigor at each stage of each cycle, the author wanted to use the same headings or structure to tell the story of the change process. The author conducted informal interviews with two action research experts in CIT and presented ideas about how to structure the cycles in order to clearly demonstrate the work undertaken at each stage. It was important to guide the story and to offer comparable stories between cycles. It was also mentioned that each cycle is like a piece in a jigsaw puzzle and it was necessary to demonstrate this and package the story by digging deep into each cycle.

The author also considered documenting the cycles under three themes, Service Design inaction, Service Design learning and Service Design in a supportive environment, but after some consideration, it was felt that the best way to tell the

story, was in a chronological order. The practice of going back over each cycle using this new format elicited some finer details and key elements that were previously missed. Five possible versions of the cycle structure were drafted before settling on the final version. For each cycle it was necessary to include information about:

- **The Problem:** the aim of the study or cycle needed to be clearly stated, clarity on why this particular problem was important and why an intervention was needed.

- **Data Gathering and Analysis:** this section was used to document what data was collected and why, observations, participant comments, photographs and justification for each decision along the way.

- **Taking Action:** what actions were taken and what happened when the actions were implemented.

- **Evaluating the action:** presentation of the results and what happened.

- **Reflection:** key learnings and how these learnings informed what happened next.

3.6 Methodological Limitations

Given that this research was undertaken by a practitioner in her field brings its own inherent bias. The limitation is that the author as a facilitator of change comes with a number of blind spots, predefined ideas and assumptions. As this was an inside-out design approach, the relationships the author had developed in her existing role are likely to have had some impact on outcomes. As such, endeavours were made to try and minimise these impacts by co-creating interventions with stakeholders rather than for them.

Additionally this research was undertaken in a single institution and therefore performing action research in another higher education institution, across similar projects, but with a different group of stakeholders may yield different results. This causes a lack of generalisability; this research does not set out to be generalisable but to create knowledge based on actions and interventions within one organisation, possibly resulting in benefits for other organisations. It is necessary to stress that the findings from this action research thesis are only relevant to the specific problems being investigated, the stakeholders involved and the context of each cycle. The data gathered during all cycles is susceptible to bias based on the tools and techniques

used, representativeness, mapping and analysis of the data and cultural complexity, all influence the results.

The research focused on the administrative services in a higher education institution and did not look at the social or academic processes and services, and although this is not a limitation, if more angles were explored it may have proved valuable in other ways. Action research is an emergent process and the space and time given to each cycle were constrained under existing project timelines. Although the study was being done from an action research point of view which led to a series of interventions and not an in-depth investigation, this was a conscious choice due to the value the methodology could deliver for CIT.

3.7 Ethical Considerations

The author followed all ethical considerations and sought advice from the Institute's ethics committee as well as support from the project sponsor, CIT's Vice President for Finance and Administration. Senior management sponsored the change programme and were fully supportive that the data collected during a number of change projects was used as part of a professional doctorate programme.

Bias can occur during any phase of the research; research design, data collection, or analysis. Proper design and implementation will help to prevent bias to some degree, although there is nearly always some bias present. The research participants and project stakeholders were not informed of the research plan, but were aware that the data and outputs of the workshops to which they contributed, were being used as part of a change programme. As such, the author did not need to formally gather consent as this was contractually obligated as part of the roles and duties of staff. This was done to mitigate any potential bias in the results so that the outcomes and resulting change were not based on the fact that it was a piece of research.

During each action research cycle, the privacy of participants was considered and all participants were anonymised for the purpose of the research. Student details were recorded as part of the survey data but only where students agreed to be contacted in order to participate in focus groups and further workshops. All students were over 18 years of age and were informed of the purposes of the data collection during the workshops.

3.8 Reflective Practice

Reflective practice is "the capacity to reflect on action so as to engage in a process of continuous learning" (Schon, 1983). In a professional context, it is about learning from one's own professional experiences in a practice-based environment, rather than from formal teaching or knowledge exchange. It is an important source for personal development and allows one to reflect on actions they execute in their day-to-day work. Reflection is not just about looking at actions taken, but more importantly, taking a conscious look at the emotions, experiences, actions, and responses, and using these to add to one's existing knowledge base to draw out new knowledge and meaning, leading to a higher level of appreciation (Paterson and Chapman, 2013). Reflective practice means taking time to stop and think and question what happened. Cycles of planning, action and reflection were the basis for implementing change at CIT and the purpose of the author's reflective practice was to:

- **Be purposeful** and allow her to learn from her experiences.
- **Be instigated through questioning** by questioning what happened and what she did to improve what happened.
- **Include the self** by examining her own values, beliefs, thoughts, feelings, behaviours, and how they impact her practice.
- **Result in a change** meaning a change in the author's knowledge and understanding, unpicking changes that went well and deconstructing the failures.

Reflective practice will involve the author looking back at her practice, making sense of it, and using that learning to affect future practice. It will permit her to celebrate the things that move her practice forward and ultimately make her a better researcher.

3.9 Conclusion

This chapter sought to identify the purpose of the research, while outlining the views of the author and justifying the choice of action research as a methodology. It identified the approach used, how the research was designed, and the methods and tools used.

Research involves defining a problem and then redefining that problem throughout the research as more insights are gathered. The purpose of this research was to discover an answer to the research question and achieve new understandings which is

exploratory research. As it was a dynamic and interactive qualitative research project, then action research was the most suitable and valuable methodology to enable the author to answer the proposed research question.

Part Four | DOC803 | Pilot Project Report

Chapter Four | Cycle One | Pilot Project

4.1 Introduction

In September 2011, members of the senior management team at CIT requested a review of their current IT systems and a proposal for integration of the same in order to deliver a consistent streamlined experience to staff and students. Issues highlighted by staff through their line managers included poor data quality and timely availability, lack of online student self-service, isolated enterprise applications and the evidential disconnect between academic business process and the IT solutions needed to support them. Technology was becoming increasingly embedded in the services provided to students with no realignment of the processes that supported these services and no proper consideration of student and staff experience. On the basis of the author's previous experience in the organisation, the focus needed to be on re-engineering the existing processes and not on specific tasks, jobs or people.

A business process review by external consultants in 2009 had highlighted the following:

- "There is a deficit in consideration of an overall approach to the actual Student Lifecycle and the supporting of same".

- "A lack of clear ownership of processes and delivery end-to-end, puts undue pressure on those areas delivering specific end product".

- "A combination of reviewing and revamping the business processes based on an end-to-end model and based on the overall Student Lifecycle, combined with appropriate adjustments to the IT infrastructure will yield significant benefits, both in terms of the student experience but also in terms of the people who support the various deliveries".

The 2011 review conducted by the author and a senior data architect was initially tasked with investigating a proposal for enterprise systems integration but concluded that the problems that existed were greater than envisaged by senior management and could be summarised as follows:

- Paper mountains in offices across campus

- Frustrated staff and students

- No clear understanding of our existing processes by staff or students

- Dirty data in systems (and the downstream consequences)

- Disconnect between academic processes, IT solutions and administrative functions

- No Student Lifecycle existed

It was clear that a new structured approach was required after observing and analysing existing processes, informal conversations with staff in a number of departments and the same issues appearing annually on the agenda of the Student Administration Services committee. This new tactic needed to involve:

- Management support, advice and direction and a review of all existing processes;

- Identifying the purpose, objectives and expectations of the process review;

- A focus on re-engineering existing processes; highlighting bottlenecks, backflows, redundancy and process gaps and clarifying boundaries, ownership and responsibilities;

- Building a cross-functional process re-engineering team and assigning staff from key areas to work on continuous improvement projects for a number of hours per week; *and*

- Aligning the information systems, business policies and procedures with the redesigned processes.

4.2 Mapping Existing Knowledge in the Higher Education Sector

Research was conducted in April 2013 to assess if other higher education institutions were experiencing many of the same issues as CIT and to understand how they were addressing these issues. For example, Queens University had started a similar project called Records Revolution to "radically shift how they were dealing with customers". They discovered that each office was sending out different communications, students were getting bombarded and not picking up the important messages. They found that working with the various faculties and schools to share headaches and bottlenecks and collaborate to solve common issues created a goodwill feeling and they felt this

co-creation of change was proving to be a sustainable approach. After conducting a phone interview with some of the project team in May 2013, they also acknowledged the mind-set changes that were required internally to adopt this new way of working and likened it to climbing a mountain.

Despite this, Service Design as an approach to solving some of these problems is a relatively new concept in the higher education sector. After sharing the JISC Enrolment project at the University of Derby (Baranova et al., 2010) with a number of colleagues, one senior manager recognised the need for a new approach to alleviate some of the existing bottlenecks. He agreed to fund and support a pilot project, and emailed a number of senior staff stating "we should propose hosting a workshop here in CIT to trial this as a process improvement methodology". An organic approach was required; constantly moving and changing to create efficiencies.

The question then was to investigate if Service Design could influence positive outcomes, leading to new knowledge and understanding of the consequences and challenges of embedding Design Thinking in an organisation of this kind. Could Design Thinking tools and techniques be applied successfully across a number of projects given the number of barriers and existing organisational factors that prevented change from happening? As discussed during the literature review, setting up the right conditions for change will lead to better outcomes. This research is attempting to overcome traditional barriers to change by introducing new tools and techniques and changing the current culture of "how we do things around here".

Prior to starting this project, it was thought that Design Thinking could deliver quick-wins and short-term benefits. What was not clear was whether it could change the existing culture to one better focused on the structural and operational issues that impact on delivering a whole student experience. Empathising with staff at the front-line who deliver services and exploring the actual student experience was the focus of this research.

Certainly, there is ample recognition and advice from Service Design industry experts to focus on issues that keep managers awake at night, such as poor user experience. Therefore, the decision was made by the author to focus on a single part of the student journey, for example, registration, to generate ideas to improve that process

and to help clarify what the target principles are for a good experience, hopefully resulting in making the case for longer term improvement initiatives.

4.3 Cycle One: RECAP (Review and Enhancement of CIT's Admissions Processes)

27/3/13: Project Team Meeting

29/4/2013 – 1/5/2013: Workshops x 3: Service Blueprinting/Mapping the As-is process

13/5/2013: Survey part-time students

4/6/2013: Focus Group part-time students

19/6/13: Project Governance Meeting

July & August 2013: Develop & Implement Quick Wins

Sept 2013: Observation of Induction process

April '13: Research and Analysis

8/5/13 – 16/5/13: Project team collate and analyse workshop outputs

23/5/2013: Idea Generation Workshop

5/6/2013: Project Team Develop Action Plan

24/6/2013: Student Interns begin

August 2013: HoD & Dept. Secretary Induction & Training

Oct 2013: RECAP Review with all stakeholders

Figure 19: RECAP timeline of activities

4.3.1 The problem

A pilot project was initiated by the author in 2013 to examine the use of a Service Design approach in a higher education environment. The aim of the study was to use Service Design tools to improve the student experience for learners embarking on a programme of study and to enable a reduction of staff workload, including the volume of queries that emerge during the busy period at the start of term.

Documented throughout this report is evidence that part-time students received no formal induction, such as the part-time student survey conducted in June 2013, where 37% of respondents reported that the process was ineffective, inefficient and difficult. As indicated by one part-time student, "please create an induction process for evening students. I never entered the library. I didn't (and this is after three years) know that it was available for us".

The main cause of this problem was that no one department was responsible for part-time students. Each department communicated with their particular students, which led to a student experience dependent on separate segmented processes. One staff member indicated the "main problem is misinformation" so rather than pushing the right information from the right place at the right time, students and staff get misinformed with regards to key processes. Given this admission, staff still recognised the need to "fully prepare the customer before they enter the service".

4.3.2 Data Gathering and Analysis

4.3.2.1 Planning

A Governance Group was set up to steer and guide the project, review progress and outputs and advise the project team. The project team included five staff from IT Services and Admissions[19] and the first task involved devising the project name, RECAP. A project plan was drafted and contained roles and tasks for each team member and a plan for gathering data. Weekly project meetings kept the project on track and ensured actions were implemented.

An email invite was sent out to all staff from the project sponsor, the Academic Administration and Student Affairs Manager, and 52 staff involved with part-time students attended three co-design workshops[19]. This included heads of department, department secretaries, IT support staff, course co-ordinators and administrators

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[19] Figure 16, p.73 contains the range of departments that participated in the RECAP project.

from a variety of functions such as Admissions, Fees, Marketing and the ID Card Office. The study was designed to be collaborative and inclusive, and the aim was to gather as much data and information about the existing process, in order to fully understand the problem.

Figure 20: RECAP workshops and some outputs

4.3.2.2 Data Gathering
Workshop participants co-created the part-time student journey using a *Service Blueprint* which highlighted all the *fail* and *wait* points in the process. The *touchpoints* were analysed using *swim-lanes*[20] and all front and back-stage operations were identified along with problems, opportunities and user needs. A *car-park*[21] was created on the wall where items or issues could be parked for later discussion, such as:

- "Would it be possible to have part-time inductions in the evening during the same week as full-time inductions?"
- "Lecturers are using personal email addresses rather than a student's *myCIT*[22] email address to communicate with students".

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[20] A swim-lane diagram is a flow chart that documents the steps and activities across "lanes" which can depict functions or departments.
[21] A car-park is a large sheet of paper hung on the wall where items can be "parked" for later discussion.
[22] www.mycit.ie is CIT's student portal and all new students receive a "myCIT" email address.

- "Why are login letters sent via the postal service, why are they letters?"

Subsequent data gathered was mostly qualitative and included surveys, artefacts, booklets, forms and interviews. Evidence was collected from existing documents such as the login letter sent to new students, registration forms and the registration pack for new full-time students. Adult Education information packs, Student Services guides and information emails sent from academic departments to staff and students were all examined. All contained essential start-up instructions for the beginning of term such as start date and time, lecture room number and location, maps and parking information.

Many unstructured interviews took place with key staff members, such as the college caretakers, who sometimes were the first interaction for new part-time students when they arrived on campus. They admitted that many students would come to them disoriented, "they can enter the campus a number of different ways, from car parks, buses or by foot, but are unsure where to find their lecture room and need directions. There is nobody here to meet them in the evening". Other issues reported by the Adult Education office were that "students don't use their college email account and do not check it for updates". The IT Service Desk reported that even though they were open until 9:45pm each evening, many students did not seem to use the service. It was evident from the student survey that actually many students did not know that this service existed. Student ID cards were given to lecturers to distribute many weeks after courses had started, as the ID card office did not open after 5:00pm when part-time students were attending classes. A number of campus maps and versions of maps existed in various forms of poor quality (Figure 22). Department support staff were so inundated with student queries at the beginning of term that they were simply unable to provide a service.

The next step was to survey part-time students to ask them about their experience and invite them to contribute to the design process through focus groups. Some of their responses included:

- "CIT is a very good facility but it's difficult for night time students to become familiar with all it has to offer."
- "I found the process around Fees and Admissions not very fluid",

- "Perhaps, because of the late registration, I did not receive an ID card. The term was practically over before I received it."

- "I met other lost students wandering aimlessly on the first night"

- "I didn't know the IT Servicedesk existed"

- "The admin offices close early and I missed them cause I got stuck in traffic and I didn't know who to contact or where to go"

During the student focus groups, 12 students mapped their experience as new students and highlighted the *bright spots*[23] and the *hot spots*[24]. *Bright spots* included clear instructions in the login letter and helpful staff in some departments. The list of *hot spots* was far greater and included "we pay for a service, we expect to be treated like a customer" and "no-one ever asked us was everything ok?" *Personas* were created by the project team to use as a guide to plan and implement actions.

4.3.2.3 Data Analysis

After the workshops, the project team spent a number of weeks collating the outputs, sifting through photographs and recording everything in spreadsheets. The feedback from staff and students was analysed and the lessons learnt were documented. All the *Service Blueprints* documented during the workshops were externalised onto a wall where the project team collated and merged the common *touchpoints* and classified similar processes into one *as-is*[25] *Service Blueprint*. The *fail* and *wait* points were mapped to an issues log which captured issues under key themes. The results from the part-time student survey and focus groups were analysed and graphed in a spreadsheet.

The main aim after analysing the data was to be able to define the right problems. By capturing all the data from various aspects and stakeholders, it was possible to frame the problems as follows:

- Many processes were manual, dependent on individuals and not documented.

- As paper was the main form of communication, many letters and paper forms caused delayed processing of information or lost information.

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[23] Bright spots are things that the organisation is really doing well to help meet their customers' goals.
[24] A hot spot is an area with high importance and low satisfaction.
[25] As-is refers to the state that something is in at the present time, for example an *as-is* process is the current state of the business process in an organisation.

- Systems were not integrated and data in one system was often 24 hours behind another system.

- There was no central point of contact or office for part-time students which resulted in a lack of adequate and timely communication.

- Services for part-time students were not open in the evening and they received no formal induction.

- Part-time lecturers were not familiar with CIT's processes.

It was clear that it would not be possible to redesign the part-time service without first identifying the main issues students were experiencing. The workshops and survey data demonstrated that:

- Part-time students felt they were not as important as full-time students.

- Part-time students did not feel welcomed, in fact it was discovered that the first communication they received from CIT was an email from the Fees Office with their outstanding balance rather than a welcome greeting.

- Many part-time students have commitments such as full-time jobs and families and need to be able to plan in advance. When they arrive to college in the evening, after a busy day, they expect services to be open to answer their questions. They get frustrated when changes are announced at short notice or not at all.

- Students are not always able take action, as they are often waiting for a lecturer to provide them with information.

Staff engagement in the workshops demonstrated both the barriers and requirements of delivering services. The key issues uncovered were:

- "Nobody told us....." Staff felt that communication could be improved and they were never sure who to contact about what.

- "We assumed......" Because of a lack of induction for new staff and no training or information sessions, staff acknowledged that they often learned about processes from their colleagues which led to assumptions.

- "I'm here 10 years and I don't know how to enrol myself against a module in Banner". Staff revealed that if they did not know the information then they

could not pass on key instructions to students, for example how to enrol for modules online.

- It was clear when service mailboxes were analysed that a vast amount of email queries were from within the institute, emphasising that staff needed clarity and information pushed out to them just like the students.

- Due to the lack of integrated systems, some staff did not have access to the latest data and information to do their job but this could be fixed by delivering some simple operational reports.

4.3.3 Taking Action

Ideas were brainstormed during a further workshop and those that attended initial workshops were invited back to co-create and ideate solutions to the existing problems. Some key problems that were identified in earlier sessions, were investigated using a *Fishbone diagram*[26], to identify the root cause, ideas and solutions to each problem. For example, one problem indicated by part-time students in the survey was that 20% did not receive any start-up communication, such as date, time and location of their first lecture, prior to arriving on campus at the beginning of term. Possible causes identified included part-time students not checking their *myCIT* email accounts and the fact that these students received no formal induction. Ideas to solve the issue included using mobile text reminders, a dedicated staff member for all part-time student communications, and providing templates to department staff with key information they should communicate.

The project team created the *to-be*[27] Service Blueprint based on all the data gathered, issues identified and ideas generated which was then used as a guide to co-design a number of improvements. A colour-coded Action Plan[28] was developed by brainstorming actions onto large sheets of paper on a wall. This plan was later transcribed into a spreadsheet. It contained 17 short term quick-wins and 10 medium-long term actions with owners assigned to each action in areas such as communications, ID cards, induction, signage and IT development. For each action,

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[26] A tool to identify all possible causes for an effect or problem.
[27] To-be refers to the state that something will be in the future, for example a *to-be* process represents the future state of the business process within the organisation.
[28] An Action Plan is a detailed plan outlining actions to achieve one or more outcomes of a new prototype or service.

evidence of why it was required was documented and a proposed delivery date assigned to each one. This Action Plan was presented to the Governance Group for approval along with results of data captured to date and proposed next steps.

A number of CIT students were recruited as summer interns to help deliver some of the outcomes and actions. It was believed that by recruiting students, they would have first-hand knowledge and empathy of what students go through and be able to use this to transform the existing part-time service. Two students from CIT's Visual Communications and Computing programmes were recruited to specifically work on the graphical and technical aspects of online and printed information. Student Leaders were trained and a script was created for them to use when communicating with new students.

Changes included a new campus map (Figure 22Figure 21) which guided new students to the right physical location while a "QuickStart Guide" (Figure 21) was used as a step-by-step journey to become "in class, ready for learning", with links to online "how-to" video instructions and who to contact at each stage. An in-class induction for new part-time students was delivered by Student Leaders where a "Kick-Off @ CIT" fold-out guide (Figure 69 in Appendix B) was handed out containing key calendar dates, contact details, library information and FAQ's. In fact this new guide was so popular with staff and students that the original order of 1,000 copies soon ran out and a further order of 500 copies was placed with the printing supplier at the last minute. Key services extended their opening hours until 7:00pm for the first three weeks of semester as suggested by part-time students. The student *Personas* (Appendix B, Figure 72 and Figure 73) developed earlier were used to help staff walk through the new service delivery. Key signage was improved including a new sign and pop-up stands for the IT helpdesk, as 42% of part-time students had revealed they did not know it existed.

Training and information sessions were provided to key staff members, where they were shown the new printed and online artefacts, where to find them and who to go to for more information. A formal induction around key processes was given to heads of department, and administrators received training, online videos and templates to guide them in their communications.
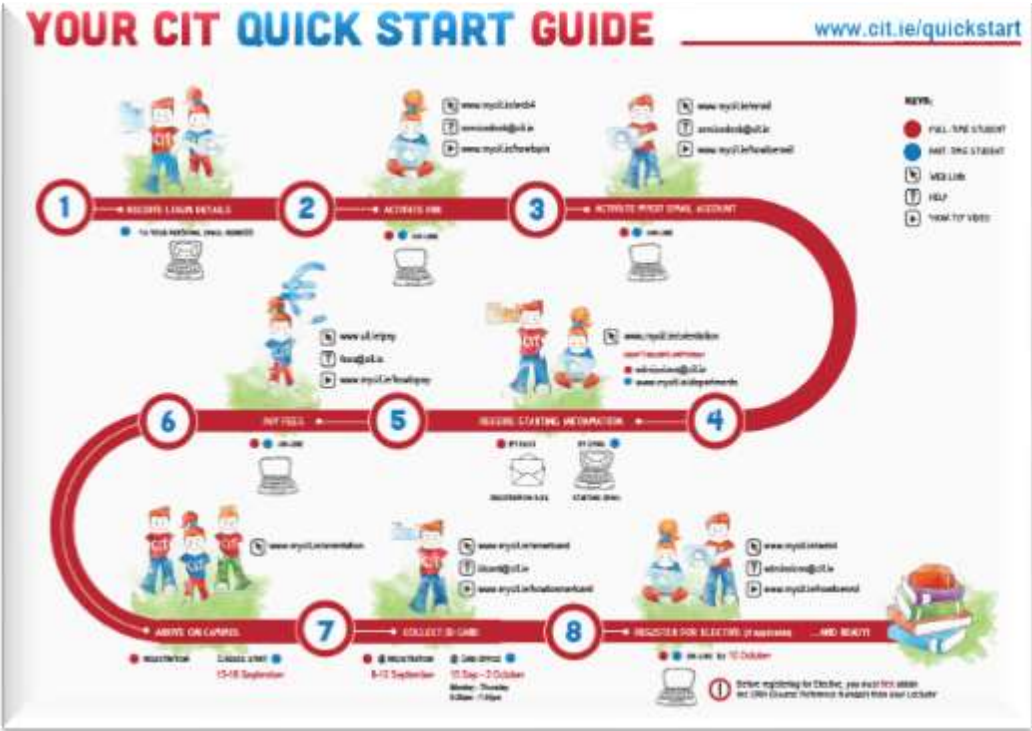
Figure 21: On top the original login letter; and below the new QuickStart guide which was linked to online in the new login email (Figure 68 in Appendix A)

4.3.4 Evaluating the Action

RECAP was a six month pilot project at CIT which confirmed that Service Design as an approach can help to improve how we do business in a higher education context. Shifting mind-set was a key objective of this cycle and demonstrating to the providers of a service how their cog and all the other cogs make up one cohesive process. The failure of an individual cog can have a negative impact on the student experience; students should experience a seamless series of *touchpoints*.

Not only were improvements made for part-time students but some improvements affected the whole student population. For example new students always received essential information such as student ID, email address and password, by post, in the form of a "login letter" (Figure 21). This letter often went to their home address when students were already living in campus accommodation away from home. It was identified during workshops that a key improvement would be to send this information via email to students personal email address. Not only did this improve communication but it also saved costs on printing and postage, not to mention the administrative overhead. Another improvement highlighted during a workshop was the importance of reinforcing the use of students *myCIT* email account for all communication.

Feedback from students was positive and they indicated that the new online information was intuitive and easy to follow. In fact Google Analytics data revealed that the "QuickStart guide" alone received 10,000 plus hits online and overall traffic to the *myCIT* student portal increased by 24% on the previous year. Footfall to the part-time adult education office was reduced by 50% and one staff member was surprised to see "there are no students' queueing outside our office, we thought there was something wrong".

A range of full and part-time students were questioned during the registration process while waiting for their IT talk or walking tour. Firstly, they were asked if they had received the login email on time, if they had understood the guide and were able to follow all the instructions. These new students verified that they were able to understand the new guides and online videos without issue and one student even complemented the design skills! In terms of communication, students indicated that

they received too many emails that were not relevant to them. When the project team investigated further, they found a need for more diligence about what emails were sent to all students and three student services managers confirmed that the primary function of student email was for important notifications. This led to a reduction in the number of emails sent to *all* students by 50% and less critical emails were redirected to a new student news section on the website. An estimated 3,500 paper forms and letters were eliminated from the part-time process and resulted in postage and print savings of approximately €3,000. Interestingly, there was an increase in calls logged with the IT Service Desk, as students now knew that it existed and it became a popular source for help and information.

In terms of the qualitative outcomes, this project created a new momentum and energy and involved a wide range of staff and students in co-designing the new process. The process was clarified for both administrative and academic staff and the experience for new part-time students improved.

Figure 22: On the left, copy of the old map sent to students after being photocopied and scanned a number of times; on the right the new improved campus map

It is important to mention that an inside-out Design Thinking approach needs to be embedded in the organisation but this will take some time. An inside-out approach would involve building the internal capability of Design Thinking by nurturing existing and emerging design thinkers and not relying on outside consultancies to support a change initiative. In the case of this research, inside-out also refers to change that is

cultivated on the inside looking out to the service users to co-design new ideas and offerings. Confidence will come from small successes like the RECAP project. During the RECAP project, the focus was on the student experience, while maybe not placing enough emphasis on the employee experience and the importance of those providing key services. The people and culture aspect of the initiative will require further research and effort.

4.4 Discussion and Reflection

It is important to acknowledge that this project was very much a learning journey and a deep dive into Design Thinking for both the author and the organisation. This pilot project, RECAP, was the first time that Service Design tools were used in a collaborative workshop approach, where stakeholders from across CIT came together to solve a problem. Evidenced by this report, Design Thinking has helped CIT to spend more time defining the right problem, rather than assuming a probable cause and then rushing to implement sometimes inadequate solutions.

Using Design Thinking tools and techniques combined with traditional project management methods assisted in addressing the underlying causes of the existing process failures. The challenge that followed was to keep up the momentum of innovation and the appetite for service improvement generated from this cycle. Staff and students collaborated to improve the overall stakeholder experience and subsequently their contribution and ideas were turned into actions that remedied the service issues identified. The aim was to move away from a silo-based approach to delivering services and to focus on improving the holistic quality of the student experience.

At the end of this cycle and based on the challenges that ensued, it was realised that there are certain conditions that enable Service Design to transform the function of organisations. One person cannot lead and deliver change, it needs to be a variety of people coming together to realise the benefits for the whole organisation. The use of Service Design tools and techniques as an investigative approach to discovering, defining and resolving existing problems in higher education administration is in itself a contribution to knowledge. Investigating the practice of how things are done with a Service Design lens is a new approach in this institution. It was a first step and a novel

way of identifying problems and challenges, the needs of those delivering and owning services, but primarily the requirements of those receiving services from the Institute. The issues being investigated are real-world problems that occur in many higher education institutions across the world and the approach of practice-led research to solve real-world problems can lead to resilient change if given the opportunity.

While it can be acknowledged that Service Design did have a progressive impact in changing this organisation, there are a number of limitations that need to be addressed. At the beginning of this cycle, the author assumed that embedding a new methodology would be easier than expected, and the energy that was required from the author and the project team to deliver this pilot project, cannot be underestimated. Certainly it can be said that there were a large number of positive actions and outcomes as a result of this pilot project that acknowledge the power of Design Thinking as a transformative mechanism for change. The author as a change agent set out to facilitate a change process using a number of tools and techniques, but if the need for change only emanates from the author's practical experience and knowledge, as opposed to the collective organisation's experience, then a number of challenges ensue.

4.4.1 Limitations and Challenges

4.4.1.1 Can Design Thinking influence the existing organisational culture to become more agile, adaptable and flexible, therefore creating a culture of change?

- **Existing culture:** Many authors including Tjendra (2013) outline what is needed to embed a design culture including top-down advocates, front-line employees who are empowered and fired-up, and a process champion who has a strong design motivation, but the discussion about how to do this in a higher education organisation is missing. Although there was no major cultural change, the tools did allow for collaboration and innovation by delivering a number of quick-wins. The challenge is to actually change habits and behaviours that have been learned and institutionalised over a number of decades.

- **Silo mentality:** Mulgan (2007) proposes that "high walls" in organisations divide people and departments and Snook (2014) identify that Service Design needs to deliver innovation across silos but is often prevented because of separate department strategies and budgets. It has conclusively been shown

that organisation silos have a huge impact on change and are a constant stumbling block as iterated by (Von Stamm, 2008; Beckman and Barry, 2007). During the pilot project, the ownership of the process was unclear as it intersected departments and this directly resulted in poor student experience. Changing structures and ownership of services in an organisation can be politically difficult but the hope is that Service Design will influence departments delivering services to work together to focus on the end user. The aim was to move away from a silo-based approach to delivering services and to focus on a holistic student experience. In the short-term, this new methodology will help to deliver improvements in a new way but the aim of changing the organisational structure and embedding a design process is a long-term experiment.

4.4.1.2 It is difficult for many organisations to create a new mind-set that allows for unstructured thinking. What leadership is required to support the design process as a new way of working?

- **Getting management buy-in is difficult:** At CIT, the initial requirement for change came from employees who were frustrated with existing processes and the downstream inefficiencies they created. The key problem in higher education is that many managers are under huge pressure to leap from one operational cycle to another with little time for iterative improvement in between. Most studies have emphasised Design Thinking as a tool to effect change but have not explained how Design Thinking can be used as a bottom-up approach to influence management thinking. Existing literature does not explain how to get senior management on board who have little or no experience in Design Thinking as a methodology.

- **Design leadership:** Miller and Moultrie (2013) insist that it is the design leader who needs to encourage all within the organisation to embrace the design process as a new way of "how we do things around here". Although CIT have a design leader as demonstrated in this first phase, the author did struggle to influence managers, free-up staff and create space for the design process because of a lack of resources, budget constraints and a focus on keeping the lights on.

- **Process ownership:** The author did not emphasise enough the importance of process ownership, and as a result, some of the actions and changes

implemented did not stick when the following year came around. It is important for the author to allow the organisation to find its own answers rather than being the one with all the answers; this is essential for change to become embedded.

4.4.1.3 What are the right tools to support and inspire change agents within an organisation and how can Service Design tools and techniques help an organisation become collaborative and innovative?

- **Traditional functional organisations:** The collaborative process of co-design immerses participants in new ways of thinking and encourages prototyping, taking risks, trying out ideas and making mistakes. Experimentation and failure are welcome in the design process. Matthews et al., (2012) used the term design interpreter as a necessary human force to inspire and blend opportunities across the organisation. Staff did not have any training in continuous improvement techniques and from discussions with other higher education institutions, this would be a necessary next step.

- **No space for innovation**: As highlighted in the literature review and identified by Design Council (2013) and Snook and Design Managers Australia (2014), change cannot happen if there is no space for design-led innovation. During this cycle, a large amount of collective energy was generated but freeing up employees from their day-to-day duties is complex; this is the reality of Service Design implementation and another "swampy" story (Schön, 1983).

- **Gathering support and momentum:** Demonstrating Design Thinking tools in everyday situations can show employees how to explore their own innovation capabilities. There is little evidence of this in the higher education sector and this research is seeking to reveal to both employees and management how everyday problems create a domino effect resulting in inefficient services. This was the first time that Service Design tools were used in a collaborative workshop approach where stakeholders from across the organisation came together to try and solve a problem. This in itself was a big improvement and a change in the right direction.

4.5 Contribution

The goal of internalising a new design-led culture in the organisation continues. Certainly Hartley (2005) recognises that iterating through cycles of action will help to better understand the reasons for failures and discover why large organisations suffer from inertia, not appreciating the need to innovate or improve. The impact of this cycle was the collaborative design-led effort experienced by the organisation, using the tools of Service Design, while discovering a few important change champions and sponsors. Leadership is essential and leaders need to be planted to actively pursue innovation and new ways of working (Liedtka, 2011).

Service Design as a tool has the ability to help an organisation to achieve quick-wins while building a community of like-minded "intrapreneurs" along the way (Clay, 2013). There are many existing problems in organisations of this type that do not necessarily require large scale change but need a group of people to come together with the same goal in mind, which is defining the exact problem and then trying to solve that problem. The phrase "we've always done it this way" has come up more than once during this journey and one key aspect of this research will be to see how to release those employees who are entrenched in the day-to-day firefighting and paper-pushing, in order to begin to deliver cumulative change. Furthermore this research will continue to investigate if Design Thinking can survive if it is only being practiced to solve short or medium term problems, and not a strategic focus of the organisation. In spite of that, it is clear is that delivering quick-wins will help to deliver credibility to Design Thinking as a new tool.

New tools were introduced to stakeholders and were well received and understood. Initial interaction at workshops was slow but improved later during the *Customer Journey Mapping* and *Ideation* workshops when users became more collaborative and focused on the common goal of a positive student experience. The innovative approach to break down barriers was done by engaging stakeholders to draft a *Service Blueprint*, viewed entirely from the end-user perspective.

Certainly there are a number of positive events that can be highlighted and used to further progress this research:

- The project generated a buzz and excitement that had not been seen in the past and brought a variety of people working together all focused on improving the student experience.

- After surveying part-time students who voiced their frustration with the existing process, this evidence was used to convince management that a new approach was required and to formally initiate the RECAP pilot project.

- By defining the right problem, it was realised that small quick-wins can fix many of the issues or at least alleviate some of the symptoms.

- Previously when implementing change at CIT, words like process, streamline and re-engineering were used. This was swapped with a user-centred language and a softer Service Design lingo: simple steps, customer journey, user needs, clear actions, and student experience; were phrases that were used on the road to transformation.

4.6 Evaluating the Change and Refining the Project Design

Costley et al., (2010) explain that as an insider, the researcher is in a unique position to study a situation or problem in depth but also has the insider knowledge which puts them in the crucial setting to investigate and make changes. During this pilot project the author and the organisation both went through a learning process and are now more knowledgeable about embedding Design Thinking in a higher education institution.

4.6.1 Culture

Changing structures and ownership of services in an organisation can be politically difficult but the hope is that Service Design will influence departments delivering services to work together and focus on the end user. It is not enough to include staff at all levels in workshops to redesign processes and experiences, they need to understand and feel the need for change. Cultural transformation is a non-linear process and that culture will only change after people's actions are altered, benefits have been observed for some period of time and people have seen the connection with the change (Kotter, 1995). It was recognised that some CIT employees did not understand the purpose of the RECAP pilot project and simply did not understand the

meaning of the term process and their involvement in this process. It is important for employees to understand why the change is happening but also to understand what that change will mean for them. If they understand that the change will ultimately improve the student experience but also impact their day-to-day jobs in a positive way, then they are more likely to embrace and own the change. Spending time to understand a culture can open up new innovation opportunities (Brown, 2009).

4.6.2 Ownership

In order to ensure change ownership, certain criteria should be in place before a project is allowed to start. This cycle proceeded and delivered a number of actions and outcomes but in hindsight, the following questions should have been posed to assess business readiness:

- Does a process owner exist?
- Is there time, resources and space to innovate and improve?
- Is there budget for the project that includes backfilling the person(s) that will be working on the project?

As the author was anxious to start demonstrating these new tools and techniques, at the beginning of this journey, cycle one was initiated and completed with the author owning and implementing many of the actions.

4.6.3 Oil-staining the process

As a practitioner in one's own organisation, the challenge is to seek out and unlock every opportunity to facilitate positive change, in the hope that eventually the Service Design process will itself become rooted in the organisation. The "oil-stain your process" expression came up at the Service Design Network Conference 2013 when Erik Roscam Abbing[29] described the Service Design process in two stages:

1. Gathering the qualitative and quantitative data to build the story and define the actual problem; *and*
2. Oil-staining your process using analysis and immersion sessions in many different parts of the organisation.

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[29] Erik Roscam Abbing of Zilver Innovation was a speaker at the Service Design Network Global Conference in Cardiff, 2013.

Design Thinking encourages the participants to embrace uncertainty and complexity, take risks and make mistakes, in contrast to what currently happens in many public sector organisations. During this first cycle, there was success in oil-staining Service Design tools and methods across the organisation, thus the organisation and the participants at the many workshops were learning a new way of doing things. It takes time and effort to prove that this new way works and if the organisation wants transformation then it needs to do things differently. Embedding a Design Thinking approach is critical and change must be choreographed over time (James Samperi, SDN Conference, 2013).

4.6.4 Space for Innovation

It is important to acknowledge that in the public sector and higher education sectors, there is a strong pull on resources to ensure the day-to-day running of the organisation continues. Traditionally there are no resources available to focus solely on improvement which makes it difficult for projects like RECAP to happen, let alone succeed. The author struggled with freeing up employees from their day-to-day duties and where staff were assigned to the project team to work on improvements, they were still expected to perform their day-to-day duties. Progress would mean management strategically considering the need for dedicated staff working on improvements, which would allow service innovations to increase.

4.6.5 Continuous Improvement

Although this cycle had significant impact and contributed to a number of the research objectives, a change in approach may be needed in order to answer the overall research question:

> To assess how Design Thinking can be used as an approach to analyse and improve services at each stage of the Student Lifecycle and embed this approach as a long-term sustainable change enabler in the higher education service system.

Although individual projects can impact positive change, it is the continuity of this change into the next operational cycle of delivery, in a large organisation, that is difficult. The author was clear that steps now needed to be taken to keep this momentum going and to gain commitment from management for this new way of

working. This was not as easy as expected and ownership of the steps and improvements was not clear when the following cycle of part-time student induction came around and some staff reverted back to their old way of doing things.

4.7 Conclusion and Next Steps

Service Design is designing services with the end users experience in mind. In the case of RECAP, the end goal was for a student to become registered and "in-class ready for learning" but the service goal was to improve the whole journey for new part-time students. These part-time students required an experience that was practical and professional. In the context of higher education these experiences begin when a prospective student makes initial contact with the institution through a touchpoint such as a radio advertisement or the recent engineering roadshows organised by CIT's Science and Engineering faculty. The potential for redesigning these services and user experiences is enormous and the possibilities exist throughout the entire Student Lifecycle, from prospect to alumni. Anyone that has attended a third level institution has experienced both positive and negative *touchpoints*, from paying fees, registering for elective modules, accessing exam results, and using a Smart Card[30] to access everything from the library, labs, and car parks. These are all part of the student journey and the responsibility lies with every institution to make these services simple, efficient and streamlined for all users.

During the RECAP project, the author investigated a number of professional doctorate programmes and discussions began with the School of Management and the PDR research institute at Cardiff Metropolitan University. Throughout these initial discussions in October 2013 with the author's supervisor and the Professional Doctorate Programme Director, it was agreed that it was important to capture the data and learning from RECAP as it was the first step and inspiration for the author's research journey. The next step on this journey was to create a Student Lifecycle as a framework for improvements, and in parallel, reach out to departments to offer Design Thinking as a tool to transform services at each stage of the lifecycle. The aim was to deliver small agile projects using Service Design tools and techniques and

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[30] The CIT Smart Card is an identity card with a contact-less chip built into it, used to gain access to key services and act as a personal electronic purse

pursuing this way of working whilst developing design champions across the organisation.

The author's role for the next stage was to become a facilitative designer, an internal conduit of sorts, one responsible for guiding a cross-functional group of design novices through a human-centred design process to solve challenges across the organisation. The author was teaching colleagues using a learn-by-doing approach and played a crucial role in driving Design Thinking throughout the organisation, one step at a time, by working with one, a few, or even many different groups at a time.

The following recommendations from the pilot project steered the direction of the further six cycles of action:

- It is extremely important for the business owner to lead the change in parallel to the service designer facilitating the process.
- By collaborating and co-defining the problem, it led to a realisation that communication was one of the biggest issues. Improving inter-departmental cross-silo communication and aligning staff efforts was crucial to solving some of the existing problems.
- Facilitating workshops takes careful planning; working through the tools in advance and being clear about the workshop tasks as well as having the right people in the room are all important factors for success.
- As the process for part-time students was not centralised after this project and no crucial owner existed, it was deemed necessary to try and design one cohesive process for all students, whether part-time, full-time, post-graduate or other, so that the whole student experience could be fully supported.
- By focusing on the staff delivering the services and improving the back-stage processes, this would in turn improve the student experience.
- Many staff had never worked on projects like this before so there was a steep learning curve for the project team, in terms of absorbing the tools of Service Design and learning how to adapt to working on projects. Training for staff in new tools and techniques was important so that design and change champions could be nurtured across the organisation.
- It was deemed valuable to get feedback with regard to what other institutions in higher education or the public sector were experiencing with change

initiatives. The RECAP project was presented to both a Service Design conference in the UK and a higher education conference in Ireland in order to get advice.

- At CIT, the initial requirement for change came from staff who were frustrated with the existing process because of the downstream inefficiencies it created. It was clear after this pilot project that Service Design was an obvious solution for many of the problems CIT faced but it was important to get management buy-in for any future projects. In order to get buy-in from senior management, it was necessary to show them that Design Thinking can:
  - deliver project outcomes and demonstrate actual success
  - help to identify and resolve everyday challenges
  - make the organisation more efficient and quick-to-respond
  - instigate collaboration and communication across teams and departments

Existing research seems to differ in relation to whether a change initiative should start as a small scale innovation or a large-scale cultural transformation. Change takes time and should be nurtured over a number of years and it is important to note that the public sector does not have the resources to deal with an all-or-nothing approach. With any change initiative, achievable, short-term targets need to be set that, once accomplished, will motivate people to persist and keep trying. The celebration from quick-wins will create buy-in for future change projects. Action research is rigorous and responsive and improves action through a process of iteration resulting in many cycles of attempting to influence change.

Part Five | DOC804 | Final Project Report

Preface to Final Project Report

An opportunity exists to co-define problems and co-design solutions by involving the users of a service and the "makers" of that service in the design process. The exchange of knowledge and ideas using a co-design approach can lead to higher degrees of support for innovation and change. Participatory design enables us to improve the efficiency and effectiveness of service operations, while at the same time, delivering value and truly relevant outcomes to the end users.

Six cycles of action ensued following the RECAP pilot project. These ranged from projects using Design Thinking successfully, to planned implementations that did not progress because a number of placeholders, such as a process owner, were not in place. A training event that put Cork on the map for Service Design in Ireland, was also the first step towards setting up a design hub in CIT, to build and deliver user-centred services. Whether Service Design tools are exclusively used within an individual project or as part of a larger process, Design Thinking and in particular co-design has the potential to open up conversations. As a result of this research, the author realised that Service Design can influence change in a positive and subtle way, demonstrating to people that change does not have to be difficult.

Cycle two developed a Student Lifecycle to try and give structure to those change programmes that ensued. Although cycles three and six did not deliver the outcomes they set out to achieve, they influenced the culture of how projects and improvements are delivered in CIT. Cycle four, Magnifeye, delivered successful change in the author's own team while cycles five and seven progressed CIT further towards embedding Design Thinking through training, supporting and leading design-led transformation.

Prior to documenting the work that was done across cycles two to seven, a methodical approach was used to go back through journals and diaries and capture every meeting, significant communication, workshop and decision point and the dates associated with each cycle. This was then used to guide the author through the process of telling the story. At the start of each cycle, a timeline of activities gives a high-level overview of the significant milestones during that cycle.

While the implementation of Service Design went on a journey of exploration, with some highs and lows, it was all done with a three pillar focus and an end goal of building internal capacity to do the following:

- Use the tools and techniques of Service Design;
- Learn and reflect at each stage of the journey; *and*
- Implement projects to create improvements and provide better experiences.

CIT student interns were recruited as part of their 3rd year work placement, throughout the research, and the purpose was twofold: to promote the intern's learning and to fulfil needs and requirements of IT Services. Students received an opportunity to work in a large organisation while learning human-centred design skills to solve problems that they as students were familiar with. The internship is an immersive experience for the student, merging the skills they have already gained on their academic programme with new Service Design tools and techniques, while working on live projects.

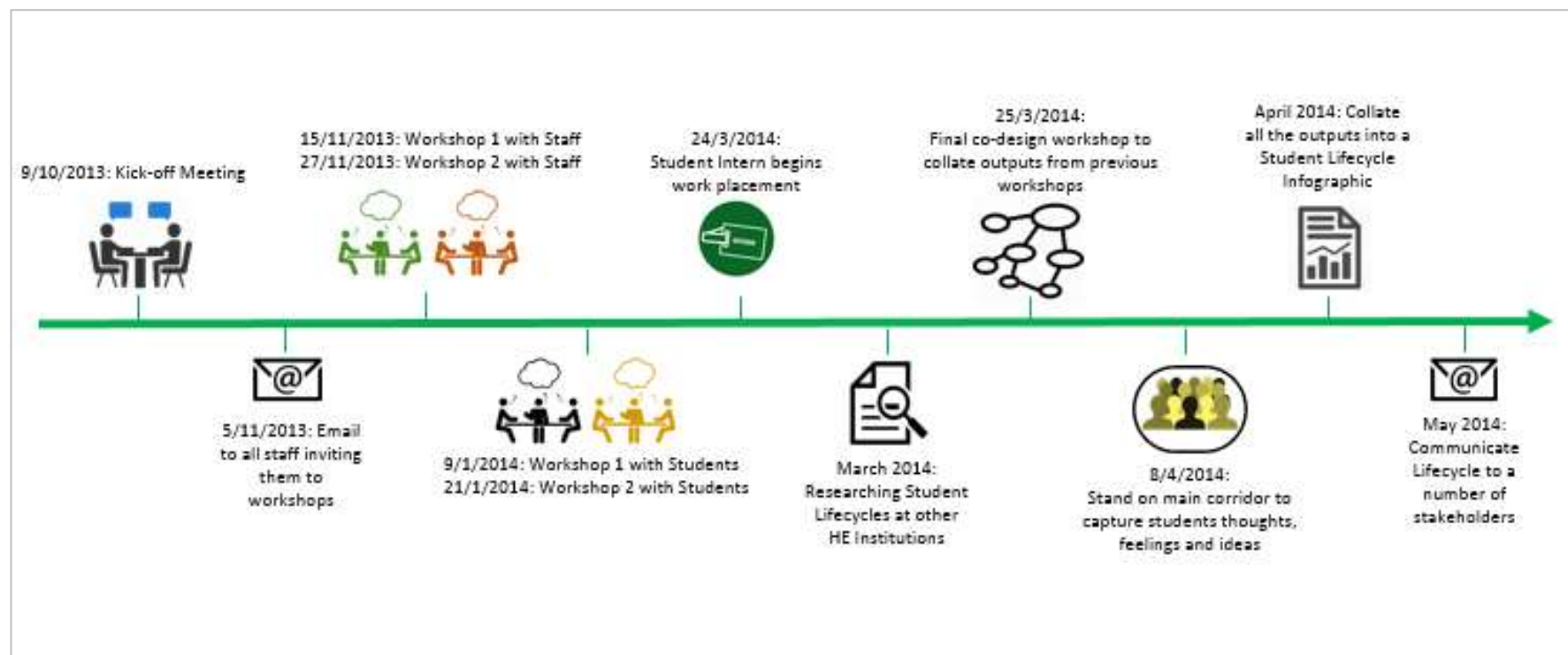## Chapter Five | Cycle Two | Student Lifecycle

Figure 23: Student Lifecycle timeline of activities

5.1 The problem

Feedback from cycle one helped ascertain that CIT did not have a framework in place to help organise, improve and deliver services for students and staff. A CIT Student Lifecycle had not been established so it was important to document the journey of the broad range of student types and create a foundation on which to make improvements. This would lead to the refinement of internal processes and improvement of the whole student experience. From a Service Design perspective, internal silos and back-stage processes should not overtly impact the student experience; they should receive a seamless service. The Student Lifecycle should be central to how CIT do business, from initial enquiries to alumni relations. In order to improve the services provided to students at CIT, it is important to understand the current service and what customers value from this service. At the same time, CIT's IT Manager realised that in order to deliver the right solutions for staff and students, there was firstly a need to understand the existing processes and the problems associated with them.

A lifecycle was therefore needed to:

- Refine internal processes
- Identify issues and opportunities
- Make the services delivered more student-centric

The lifecycle would need to be self-explanatory in order to be circulated across the organisation. It would be a way of outlining some clear actions, something to design around and importantly become a catalyst, not a conclusion. It was important to ensure that the project was not simply highlighting the journey step-by-step, but hopefully exposing some new insights, for example what preference students have for one channel over the other, which part of the journey is evidently ineffective, or which part of the journey had not been considered.

5.2 Data Gathering and Analysis

The project sponsor sent an email to over 60 senior managers urging them to nominate staff in their area to attend two workshops to document the existing Student Lifecycle. An academic staff member was assigned to the project for two hours per week, which was a novel approach at CIT as an academic secondment to IT Services had not happened previously. She contributed to many parts of the project,

including planning the workshop structure and brainstorming ideas as to what a lifecycle might look like (Figure 24). Although the three images in Figure 24 are not fully legible, their purpose is to demonstrate the activities of brainstorming. First and foremost, the objectives for mapping the student journey were thrashed out with senior management and the project sponsor. Other discussion points included whether workshop participants were mapping interactions or transactions, the start and end point of the journey map, whether to map in broad terms or in detail and what the outputs would be.
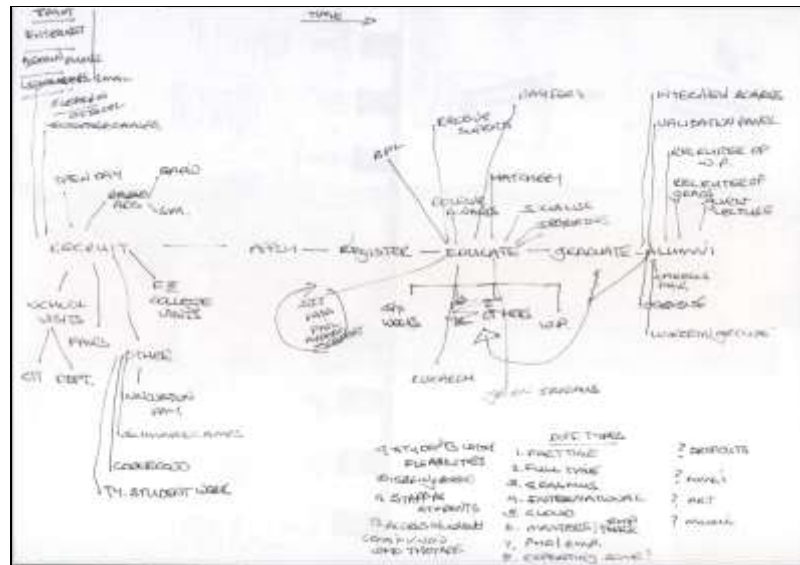
Figure 24: Brainstorming ideas during the workshop planning stage

The following seven objectives were agreed in collaboration with the project sponsor, senior management and the project team:

- Understand how customers use the services CIT provide
- Plan, design and implement key services across CIT for *all* students
- Identify issues and opportunities
- Deal with students more efficiently
- Retain students
- Minimise negative student experiences
- Improve communications

While experience maps and journey maps existed for many types of organisations, none could be found in the higher education sector. A student intern was recruited as part of a six-month work placement and her main focus was to capture and analyse student's thoughts and feelings. Where they existed, research was conducted into Student Lifecycles in other higher education institutions and how they used them to structure and improve their services.

Four workshops with 24 staff and 11 students were organised to map all the steps that students grapple with as part of the service delivery process; from their first interaction to when they transition to alumni. Participants were then tasked with grouping and labelling all the *touchpoints*. *Personas* created during the RECAP project

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(Figure 72 and Figure 73, Appendix B), were used to walk through the sketched lifecycles to ensure nothing was missed. The Student Lifecycle workshops were designed in a structured way to generate open interaction among the participants and gather as much data as possible. Two hour workshops were sufficient to map all the interaction points that a student has, before they join CIT, as a student at CIT and after they leave CIT. Co-design tools allowed staff to empathise and walk in the student's shoes and shed light on all the different *touchpoints* the students have during their time at CIT.

Figure 25: Staff workshop on the left; and a student workshop on the right

As it was difficult to get the desired number of students into workshops (Figure 25), an interactive stand was setup on a main thoroughfare on campus (Figure 26) in order to engage students and capture their thoughts, feelings, ideas and suggestions, as they passed by on their way to lectures.

Figure 26: Collecting thoughts, feelings and ideas from the CIT Student population

5.3 Taking Action

A number of concerns were highlighted during the project and it was agreed at the final workshop that there was a need to:

- Clarify existing staff roles

- Communicate more effectively to both staff and students

- Initiate new projects to improve the student and staff experience

- Design new *touchpoints*, co-ordinate existing *touchpoints* and extend *touchpoints* to more students

The primary output of this cycle was a map of the student journey as shown in Figure 27, from Prospect to Alumni which could be used as a framework to analyse and improve the student experience and to influence CIT's strategy and prioritise projects. Another bank of student *Personas*[31] was developed, along with an inventory of *touchpoints*[31] that highlighted all the steps that students come across, as part of the service delivery process.

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[31] Some of the project artefacts including the Touchpoint Inventory (Figure 71) and examples of two *Personas* (Figure 72 and Figure 73) can be seen in Appendix B.
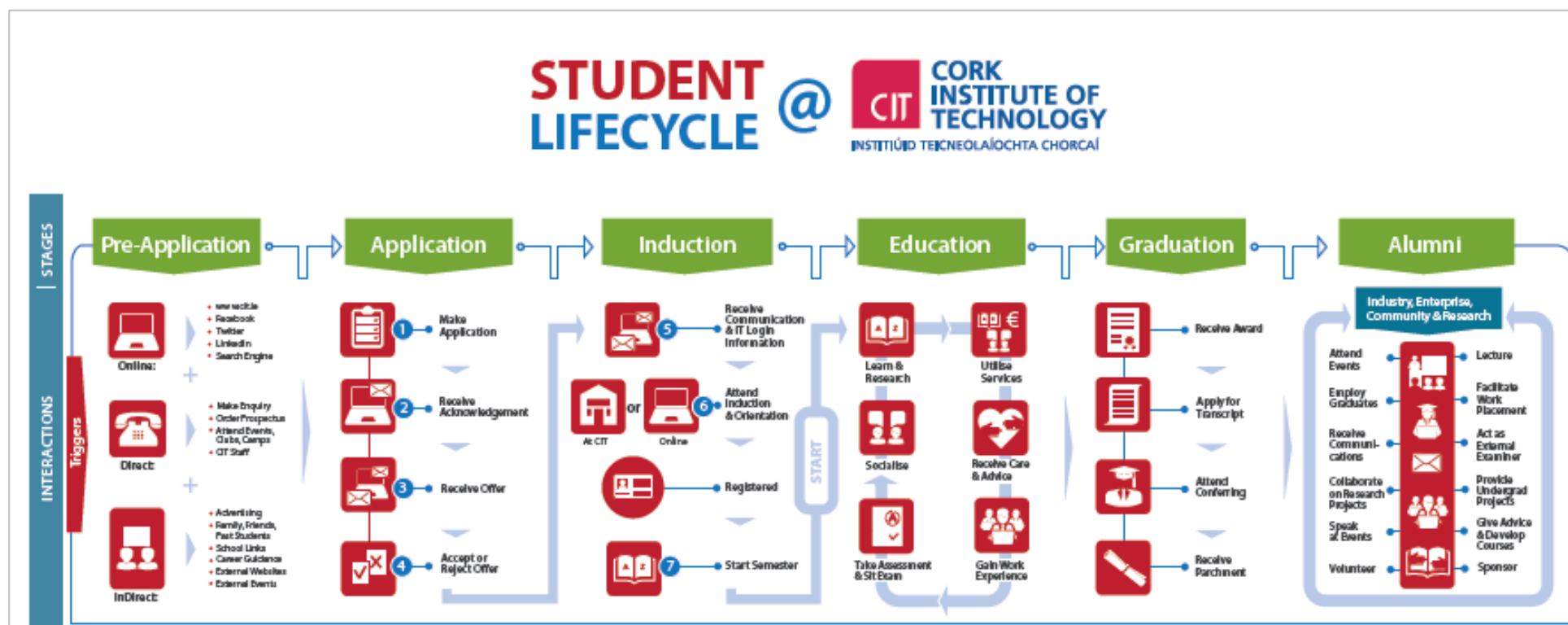
Figure 27: CIT's Student Lifecycle

5.4 Evaluating the Action

Some of the opportunities and actions that were identified included restructuring the induction process to include all new students, creating a semester two induction, online induction and late induction events. Providing the right information, in the best way, on time and encouraging students to become more pro-active in understanding their responsibilities were all considered important factors for improving the student experience. Conversations with numerous higher education professionals as part of this research, has highlighted that many higher education institutions struggle with similar issues. These include trying to get students to use services, read important communications and understand what supports are available to them, including administrative, technical, learning, and social and pastoral care.

Student thoughts and feelings ranged from relocation anxiety, financial strains, to a lack of understanding about what supports were available to them. Other opportunities included capturing lecture attendance which would allow the institute to identify student retention issues early, offering career advice as a module in fourth year and a new programme of "start of semester" support in relation to repeat exams, failed modules, and students having full realisation of their options.

5.5 Reflection

A Student Lifecycle was documented and clarified how different departmental silos in the organisation need to collaborate to deliver a better service at each interaction or touchpoint on the journey. The lifecycle was never communicated to the wider CIT audience and again this relates back to the human-element of Service Design projects and the importance of ownership. It was now clear that a major programme of work was needed to scope out the Institute's plans to support the student journey. It was also clear that Service Design tools and techniques could assist in that programme of work. A structure like a Student Lifecycle could start to enable relevant and timely services so that all students would have a consistent and seamless experience.

The following problems needed to be addressed:

- Overcoming the silo effect in order to deliver seamless and consistent services.
- Lack of end-to-end process ownership.

- Fragmented IT systems meant that an entire view of students' data did not exist, although this was not necessarily an IT problem, but a need for business-led change.

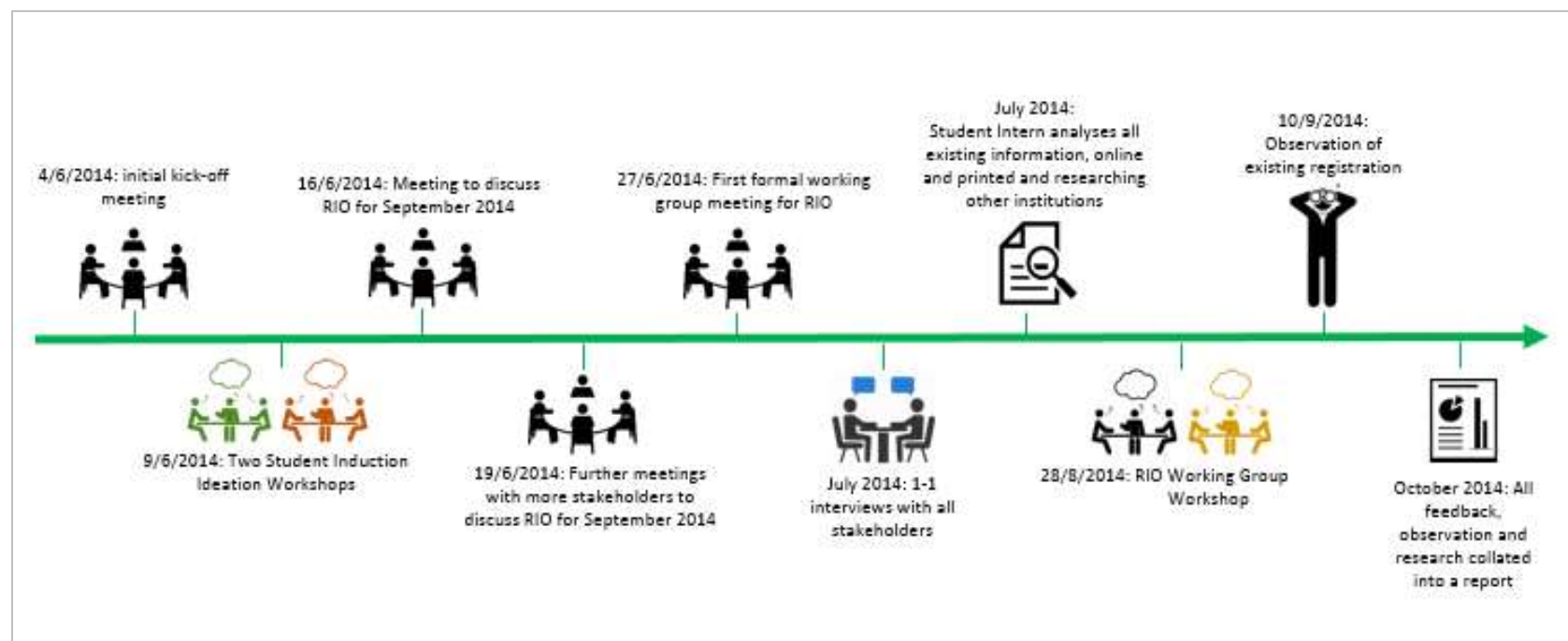# Chapter Six | Cycle Three | Registration, Induction and Orientation (RIO)

Figure 28: RIO timeline of activities

6.1 The problem

While RECAP looked at the registration, induction and orientation process for part-time students, it was evident that CIT's new students had very diverse first-time experiences dependent on the type of student they were; undergraduate full-time, part-time, postgraduate or direct entry. All received varying levels of induction or none at all. Different offices and staff members were assigned to deal with specific groups of student needs, for example, the Mature Student Office, the Disability Support Service, the International Office and the Erasmus Office. Administrative staff in each of the academic departments also provided information to new students.

RECAP highlighted that the student experience was inconsistent at the beginning of semester one and that there was a duplication of effort in terms of staff delivering an induction experience. Staff experienced a lot of dissatisfaction with the services they were struggling to deliver. During the RECAP workshops, staff members said: "start-up is a mess and chaotic for all involved" and there are "no standard operating procedures, currently it is based on individual departments; there is no formal process documented". This was further evidenced by the fact that a "vast amount of email queries are from staff within the institute". Communication between departments involved in induction was lacking in central organisation, and led to students receiving incorrect information as evidenced by one staff member: "students are annoyed when they come to Admissions as they have received the wrong information". Students were also frustrated with being given the same information twice: "Why do I have to go on another tour; I did one last week; this is wasting my time. Can I just get my ID card and go?"

It was not clear who should take responsibility for which tasks and many of the ways in which students were introduced to CIT were based on "we've always done it this way". As was evident from the departmental silos in RECAP, changing institutional structures based on student needs, had not been considered before. RECAP emphasised that staff had a responsibility, and more importantly, wanted to "see a student's problem through to the end" rather than just solving part of a particular problem. What stood out in the RECAP workshops was that staff did not "understand how the whole system works; we only understand our own part". There was no formal process documented and the terms registration, induction and orientation had

different meanings and connotations depending on who you asked. In response to this, the author suggested establishing the Student Experience Working Group, and the purpose was twofold:

- To review the registration, induction and orientation experience for all new students.
- To introduce the working group and workshop participants to co-design techniques, that would connect those delivering services at the front-line to the larger vision.

6.2 Data Gathering and Analysis

An initial meeting was organised, with the existing, but temporary, registration and orientation co-ordinator for full-time undergraduate students, to understand what the current process entailed. A follow-on meeting was then organised with those staff who had some administrative involvement in the registration, induction and orientation process.

Although senior management had given the green light for the project to proceed, this was not communicated on time to all stakeholders and the first meeting got off to a shaky start. At the third meeting after some initial brainstorming, it was agreed by all attendees to name the group "Registration, Induction, and Orientation (RIO) Working Group". The RIO Working Group was setup to plan, design and implement a consistent experience for all new students and to review all communications and materials, both printed and online, for all students. The group was made up of eight senior administrative staff members in each of the key administrative services involved in student inductions. A project Governance Group was setup and it was agreed to invite other staff members, such as a Students' Union representative, to join the working group. The goals of the group were established and the first steps included defining process owners and operational owners for each part of the existing services. This was followed by analysing the existing *as-is* orientation and registration process and designing the *to-be* process from "offer accepted to in-class, ready for learning" for all student types.

Two workshops were organised and made up of 12 staff across many service areas (Figure 16, Chapter Three), in essence, any staff member with whom the students interfaced during their first interaction at CIT, was invited. The aim of the first

workshop was to determine what people understood from each of the terms "registration", "induction" and "orientation" as can be seen in Figure 29.

Induction	Orientation	Registration
Introduction to processes and services	Physical walking tour to familiarise students with the surroundings (know way around)	Enrolling for classes
Formal introduction to CIT overall	Personal introduction	Enrolling in a course and receiving student card
Long Term' Semester 1 & 2	Day to day running	Verifying name and DOB
Ongoing	Timetable & intro to dept	Paper work & formal procedures
Academic introduction	Blackboard/email	SRS Record
Introduce students to the admin processes	Practical Information for CIT	Documents
meet acadamic staff	Physical Campus Tour	Fees/Grant
technical resources "how-to"	Tour	Banner
Services offered	Meet support services staff	Registration allows induction and orientation

Figure 29: RIO workshop one outputs, definition of terms: registration, induction and orientation

Tools such as *Brainstorming* and *Five W's*[32] were used to determine what new students needed to know, not only when they arrived, but also before and after their arrival on campus, including the objectives and *touchpoints* associated with each stage. An excerpt from this workshop is visible in Figure 30.

What Students Should Know		
Before They Arrive	**When They Arrive**	**After They Arrive**
Accomodation and funding	Careers and counselling	Register for electives
Room Number for first class	Register for online system	What are electives
Where to go	Where to go to fully register	How to join a club/society
Are the grades recognised in my home country	International society	Student services
Visa, flights, accomodation	Admin & exams office	Where can I get CRN codes, is there a
Date & time to arrive	Where is the int'l office	What electives are available to take
Do they speak Irish or english?	Where to get ID card	ALC
Are my completed modules valid over there?	Department secretary	Learn about CIT
Is there RPL	Is there an online portal with key student information	Class rep
Is there good public transport	Is there an induction/tour	Can I use the library
How do I get there	Blackboard	Can I catch up on missed classes? (late travel)
The schedule for the orientation and induction	Where the class is	If I have a problem where do I go?
Dates/times	Where to meet new people	Is there help available to better understand course language

Figure 30: RIO workshop one outputs: what students should know

The aspiration of the second workshop was to examine the data from the first workshop and classify it into a sequence of events and logical groups. Participants were then required to co-create new terms, labels and objectives for each group, while trying to steer away from the words registration, induction and orientation, and focus on telling a story of what should happen.....first, next, then.....finally.....while being inclusive of all student types. An example of the outputs from one group is demonstrated in Figure 31.

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[32] A tool used to explore an idea, problem or a theme.

BEGIN				
B (Blast Off)	**E (Essentials)**	**G (Guide To CIT)**	**I (Information)**	**N (Now You're Here)**
Welcome Pack	Map	Campus tour	What is needed for class	Class Reps
Email with Login Details	Where to go on the first day on campus	Services available to you (tweaked as per student type)	Timetables	Clubs & Societies
How to pay fees	Start date & time	ID Card	Elective Available	Dictionary to college
Accomodation around CIT	Public transport	SU	Free choice modules available	Importance of email reiterated to students
How to videos, guides, online	Schedule for Introduction to CIT	Where to go day 1	Who to contact with a query	Post year 1 information
How to register	Is there an induction?	Importance of myCIT email	Who to direct a query to	Assessments and exams
How to get there		Where are the services	IT Servicedesk	Deadlines
Online portal for information		Marks & standards	Grinds	Course Descriptor
Map/Handbook		Rules & regulations	Opening times of all	Where to go for help ALC
				Student Assistant Fund

Figure 31: An example of the outputs from workshop two, co-creating new terms and labels

After the workshops, all the data was collated and coded into patterns, for example, "what students need to know" was categorised into sequential groups such as first day information, campus information, offices and departments, services and facilities, as evidenced in Figure 32.

What students need to know							
First Day Information	*Campus Information*	*Offices & Departments*	*IT Information*	*Services & Facilities*	*Admin Information*	*Support & Development*	*Student Life*
Where/how to get ID card	International Office	Main contacts (erasmus, HoD, course co-ord, services)	Websites	Societies - Where to meet new people	How to register	Careers & counselling	Cost of living - what/where is good value?
Is there an induction/tour	Is there parking, is it free	Where offices are (e.g. int'l office)	Blackboard	What services are available to me	Admin & Exams office	Access & disability support	Accomodation
Where the class is/room for the first cass	Map/handbook	Department Secretary	Is there an online portal with key information	Library information - books available, how does it work, online databases	myCIT login details	English language support available?	Social interaction
Information on timetables and locations	Signposts	Department information/materials	Is there an interactive map	Canteen & shop times	How to check enrollment (fines)	Can you get RPL	Mobile phones/where to email or contact home & cheapest way/bank account
Where to get help (personal support, academic, IT)	Feel welcome	General email address, who are they? (e.g. admissions, HoD)	Videos? How-to?	Doctor opening times	Calendar	Support services information	
Actual start date	Is there good public transport		How to top up smart card	Where are the services	Fees/grant information	Access - register with dis. Office	Visas, flights Currency
Class details	Bus timetable/parking		Open access	Services opening times	Information on exams/academic and how it works	Are grades recognised in my home country	
Room numbers and locations	Map, directions, orientation, societies		Printers - location, costs, how-to	Online menus from the canteen	Electives/modules/CRN's	Disability support handbook, orientation	Events and integration with other students Backup assignments & progress
How do I get there			Information available online	Students Union	Jargon dictionary (semester, module, CRN,	Who to talk to	
Schedule for orientation & induction			IT services downtime	Scholarships	Rules and regulations	Who to contact in special circumstances	Upcoming events
Academic calendar			How to get support	Sports facilities and bursaries	Contact information	ALC	
Log on details				How to join clubs/societies	How to register for electives	Where do I go if I have a problem?	
Cost of fees				Career progression paths	What electives are offered - list?	Support for course language	
Transport to and from Cork				Location of key services	ID cards	Peer support	
Students Union & staff				Rest rooms	Admissions talk? Modules, enrollment etc.	Continued support and connections made	
General class information				Facilities available	Withdrawal/deferral	Templates and tips for academic writing	
Who's who?				Open access	How to pay fees	Grinds	
What to bring with me					Log on details	Scribe	

Figure 32: RIO workshop outputs coded and categorised

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The student intern recruited at the beginning of cycle two and still on work placement with IT Services, started to collect and investigate data from all aspects of the previous September period. This included evaluating existing content and web analytics from the student portal and categorising the most important search terms on the various websites which resulted in the following list: fees, Blackboard, Erasmus, exam papers, modules, calendar, careers and email.

Queries and emails to key services such as Admissions and IT services were analysed, to discover common student issues and what they needed to know at this crucial time of year. It was also realised that not all queries were being captured, so there was no record of the total number of interactions, phone-calls and in-person queries, to the front counters in both areas.

11 key staff members (Figure 16, Chapter Three) involved across the entire process were interviewed in order to understand their inputs and outputs, to and from the existing process. The student intern created a template (Figure 33) for these interviews, based on outputs from the workshops. These staff members were chosen because of their various front-line interactions with existing students; dealing with all administrative queries such as Wifi connectivity, enrolling for modules and getting an ID card. The results of these interviews were collated into a table, Figure 34.
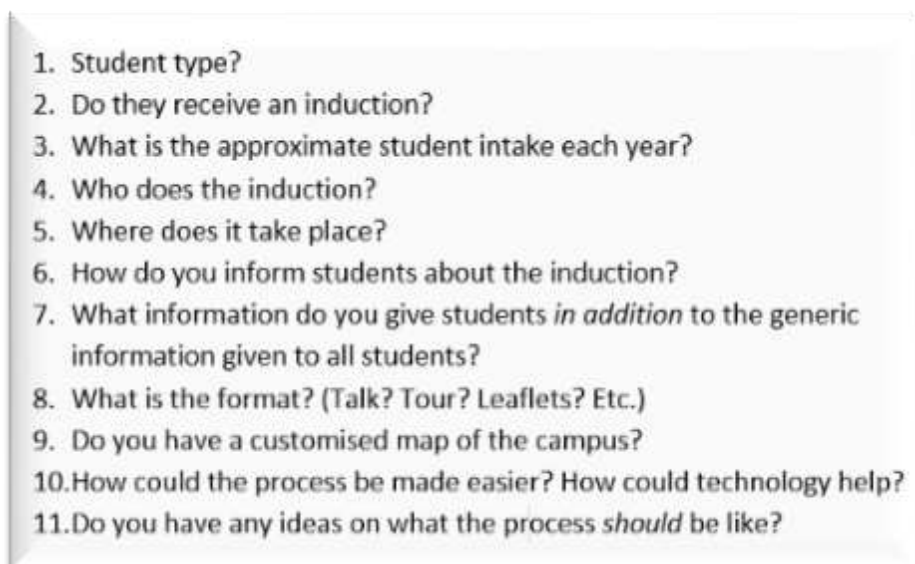
1. Student type?
2. Do they receive an induction?
3. What is the approximate student intake each year?
4. Who does the induction?
5. Where does it take place?
6. How do you inform students about the induction?
7. What information do you give students *in addition* to the generic information given to all students?
8. What is the format? (Talk? Tour? Leaflets? Etc.)
9. Do you have a customised map of the campus?
10. How could the process be made easier? How could technology help?
11. Do you have any ideas on what the process *should* be like?

Figure 33: Template used to capture feedback from staff

	Before They Arrive	First Visit to CIT	After They Have Started
Full Time CAO (mature, disability)	Registration pack	orientation & registration day - wristbands	Services available (matrix from Fiona, support services)
	Login details (after Sept 1st)	registration, document checking, id cards, walking tour, talks, dept meeting, ice breakers)	Communications (emails-departments/student services/admin/SU, mycit, twitter)
	Invitation to attend mature/disability orientation	mature & disability orientation	Social events (good start, services expo, SU -> healthy CIT, Off the booze on the ball)
Part-time	login email	Open day (3/4th sept)	
	dept email	First lecture -> 10 minute in class induction and kick off guide	
		Business orientation the Saturday after class starts - tours, talks, ice breakers.	
Post-grad	Contact with supervisor	Presentation evening from post grad office about the post grad office (no general CIT info)	
	Login email	Meet with supervisor	
	Application forms sent out or downloaded	post-grad society	
Erasmus	emailed invitation for orientation	Handbook	
	map of CIT, Cork and Ireland	presentation	
	erasmus booklet on website	meet HoD/Course Co-ord	
		Join in with Friday orientation/registration	
International	Sends itinerary	Welcome pack (3 maps, what's on, itinerary)	
	International student handbook	Meet int'l office	
	Info about visas, immigration, flights	Social reception	
	Accomodation is booked for Brazil students	Orientation on the Friday	
	They must prove identity and present forms before getting fully registered	Int'l society - Saturday tour of cork	
		Info about insurance, bank a/c, irish sim cards	
Post Year 1	Offer letter with registration form	Info from departments?	
Fás/Solas	Info sent by Fás	Registration pack from admissions	
	List of new students given to caretakers	Health & safety talk from Solas	
		No general CIT information	
		SU?	
Springboard	Invited to CIT for Friday 12th Orientation. By Who?	Main Orientation	
		no ID cards (not on system)	

Figure 34: Summary of interviews with key staff delivering registration, induction and orientation to various student groups

A *Cognitive Walkthrough*[33] was done from the local bus stop to the main campus, and clearly identified that no useful signage existed at the numerous entrance points to the main campus (Figure 35). Other universities and institutes were researched, in particular their online information for new students and it was discovered that inductions ranged from a couple of hours, to a couple of days in some American universities. Creating lots of rich and suitable online content for new students was the approach in many institutions. Existing CIT orientation programs were analysed for all

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[33] A usability evaluation method in which one or more evaluators work through a series of tasks and ask a set of questions from the perspective of the user.

cohorts of students, including Mature Students and Erasmus Students, to understand current practices.

Figure 35: No useful signage existed at entrances to the main campus

6.3 Taking Action

The plan was to influence the organisers and managers delivering induction, to focus on the experience of students across the various *touchpoints*, and not just on their individual piece of the puzzle. Much of the data collated revealed that it was important to improve cross-silo communication and create a vision for student experience. This was particularly highlighted during the feedback meetings with staff and included:

- "Joined-up thinking is required around student-facing publications, to avoid duplication"

- "Too many publications; Students' Union, Fresher's pack, Good Start, IT Services – we need to streamline"

- "Administration, Student Services versus Academic - need to be aligned. A smoother process for students"

- "No one person in charge of training Student Leaders; we need to develop this"

- "Good Start or Just Ask should not be considered as 'separate from'; they should be 'part of' the 'whole' service"

- "Information given to new students is sometimes not accurate"

Fragmented communication was also evident when feedback from Student Leaders showed that they received conflicting messages and instructions from staff who were focused on "their part" of the process, and resulted in inconsistent information communicated to new students. The ultimate goal was to use co-design methods to improve existing services by means of an iterative process of understanding the context, observation, stakeholder analysis, building *Service Prototypes* and designing new experiences. This was the direction taken by organisations such as Lewisham Council, Alberta CoLab and University of Derby, as discovered in the literature review.

It was agreed by the working group that because the RIO project was not initiated until June 2014, there was little time to implement changes for September of the same year. Instead it was agreed to stay in the problem space for as long as possible, observing the existing process and identifying areas for improvement. During the September period, a lot of data gathering, observation and discussion happened. All aspects of the registration, induction and orientation experience were observed including department talks, IT induction, walking tours and the registration process which included the processing of paper forms and production of CIT smartcards. Evidence gathered included photographs of queues (Figure 36), signage and observations, and informal interviews were logged into a spreadsheet under the following headings: date and time, title, description, associated quotes, descriptive insights and need statements. *Service Prototypes* were used to develop a "new student" section on the student portal and temporary paper signs were created in key

areas such as Admissions, Fees and IT Services. As a result of all the research activity done with the different groups, gaining exposure to staff at the front-line and actively participating in the various processes, ideas were generated, gaps recognised and opportunities became obvious.

Nine *Personas* were created to represent all the various student types and their journeys, in order to gain awareness of the factors influencing their experience. A student services matrix was developed to understand what services were available to which students (Appendix B, Figure 74). For a three week period, queries were captured at the front-line with templates that were created based on initial analysis of previous years queries. Snapshots of the queries captured are shown in Appendix B, Figure 75 and Figure 76. This was used as a method to encourage staff to understand the queries coming in so that they could start to contemplate ways of reducing the queries rather than just accepting that every September was destined with queues of students with lots of queries. The aim was to reduce or eventually eliminate those queues through designing better *touchpoints*.

De Bono's *PMI* tool was used to analyse the September 2014 experience from a staff point of view (Extracts from this analysis are visible in Appendix B, Figure 77 and Figure 78). It was not usual to gather feedback in terms of iterative improvement for the following year and people tended to forget what happened so it was important to capture this while it was fresh in their heads. A feedback session with Student Leaders generated lots of new ideas and a summary report of actions required and key observations was sent to the working group and the project Governance Group (Appendix B, Figure 79). For example, it was identified that the information session regarding fresher's week was not needed at this stage, and speakers should concentrate on a prioritised list of messages. A record of all the information gathered was created, in order to focus the process redesign.
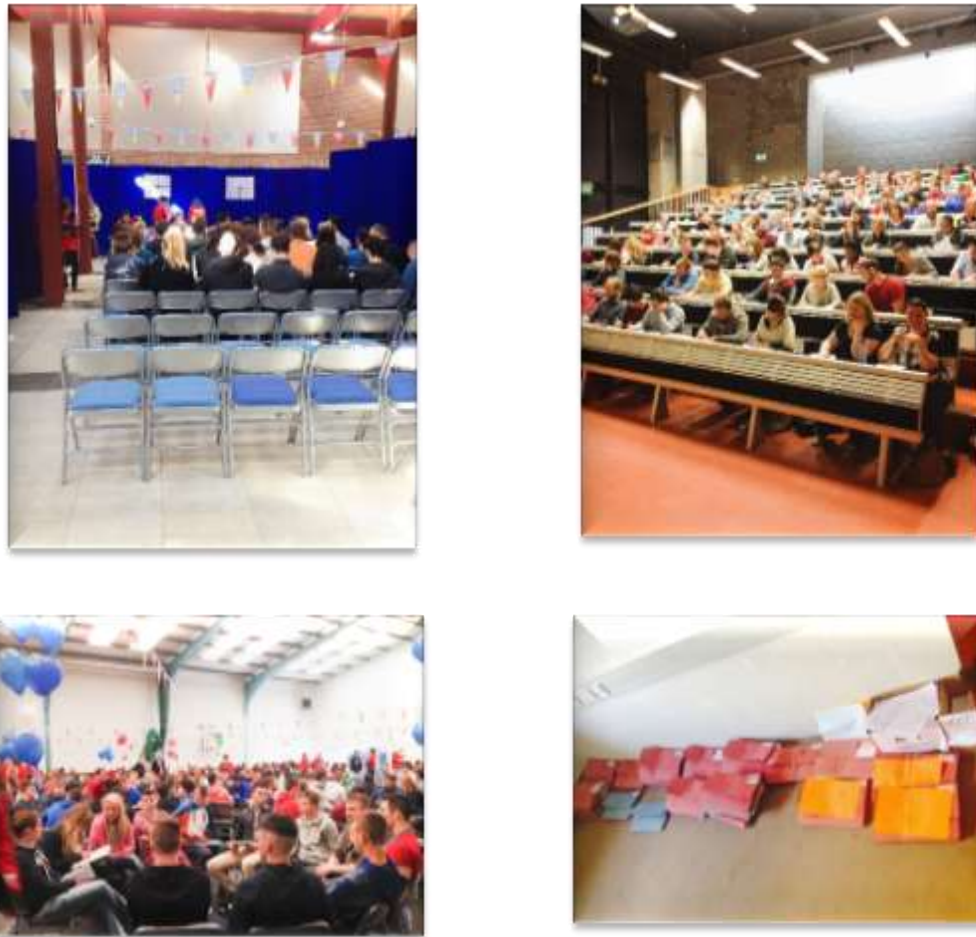
Figure 36: Photographs of the 2014 registration, induction and orientation process

6.4 Evaluating the Action

The results and data were extracted into a spreadsheet and themes emerged using an inductive process of pinpointing, inspecting and recording patterns. It revealed that whatever students needed to know, staff did not have a clear understanding of the existing processes. Good communication was in existence for the full-time registration process but planning needed to start earlier in the year. Internal communication around the separate department processes that supported registration, orientation and induction, needed to be improved. Many student and staff queries to central services were a direct result of manual paper shuffling and labour-intensive data entry, resulting in students not enrolled on systems when they arrive for their first day. Concerns were expressed during workshops, around the internal miscommunication that resulted in students being sent on a wild goose chase, desperately trying to get their administrative requests sorted. As a result it was decided that training was necessary for all staff involved in any aspect of the service,

pertaining to the flow of data through systems, and the effects of missing or dirty data. One idea considered was that maybe too much information was given during that critical induction period and that students were trying to absorb too many messages. Induction needed to continue into week one, two and three and an opportunity existed to shake up elements of the delivery and spread out the information provided to students over a number of weeks, exploring a number of methods. Staff needed to be allowed time to prototype; take risks, try out ideas and make mistakes. The focus needed to shift to the experiences across *touchpoints*, both the student and staff experience and to create better services.

This research cycle only got as far as the "discover" and "define" phases. The desirable change was a fully cohesive cross-silo organisation of registration, induction and orientation for all new students in CIT. Initially when the RIO Working Group first met, there was a lot of confusion due to a lack of communication across departments. As RIO was seen to overlap two departments, there was unclear ownership and the first meeting revealed frustration and inefficiency. It became clear during this cycle, that in order for change to stick, it is critical for the front-stage and back-stage staff to be completely engaged with the process. This is not an easy task, and visibly employees are so burdened with their day-to-day jobs, they do not have time to consider broken processes. This is when the business owner or department manager must facilitate space and time for continuous improvement.

6.5 Reflection

It was realised that the assignment of an overall co-ordinator for registration, induction and orientation was necessary, in order to ensure that all changes could be implemented in the best possible way. It was necessary to recruit Student Leaders and interns to help co-design the new process and design new online and printed material. In summary, no change could happen when the following barriers existed:

- No obvious process owner
- Lack of management engagement and support for the change
- A working group that lacked steering and direction
- Change of staff and key staff members leaving
- Political and cultural divides that remove focus from the student experience

- Lack of time and resources given to design and improvement activities

- No incentive to improve the process

- Isolation of various processes and tasks within different departments

- No holistic view of all new students and their first experience
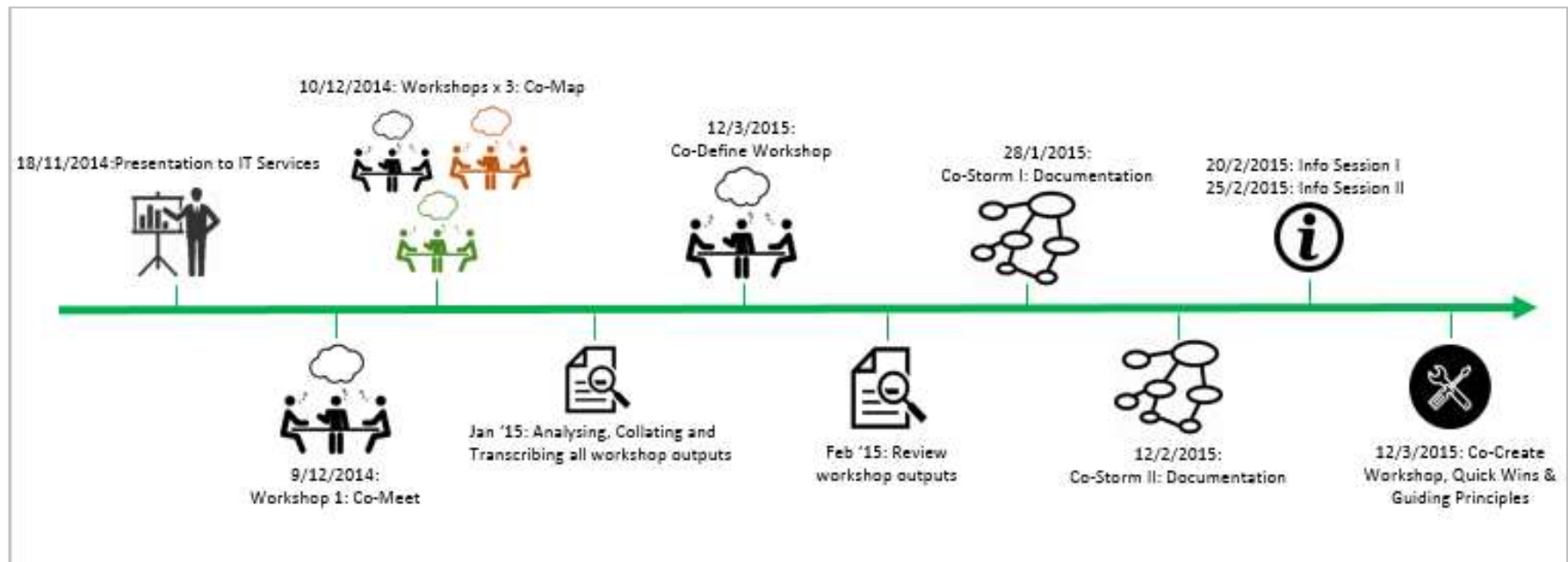
Chapter Seven | Cycle Four | Magnifeye

Figure 37: Magnifeye timeline of activities

7.1 The problem

Continuing on from RECAP and RIO, it was realised that the back-stage processes and the flow of student data through CIT's IT systems was not fully understood by all those involved. As RECAP focused on the induction stage of the Student Lifecycle, it was decided to revisit this stage, with an emphasis on understanding the flow of data from one system to another and the intricacies of managing this. The RECAP project had already mapped the front-stage *touchpoints*, evidence and participants, using a *Service Blueprint*, but it was now time to focus on detailing the back-stage processes and systems.

As identified during cycles one, two and three, many of the problems that existed related to the silo mentality of service delivery and process ownership (Figure 38). The busy and chaotic September period consistently led to large volumes of calls, emails and queues for front-line services[34], and student footfall to-and-fro between departments escalated during this time. There was a lack of understanding of processes and technical scripts; people knew "their own part" of the process and no record of *all* processes, scripts and data flows existed, leading to delays in call resolution and frustration and confusion for both staff and students. As many of these problems occurred in cycles, as soon as the induction and orientation cycle ended, the problems disappeared until the next intake of new students. The tacit team knowledge built up in September was not documented, which resulted in all the same problems and issues resurfacing the following year.
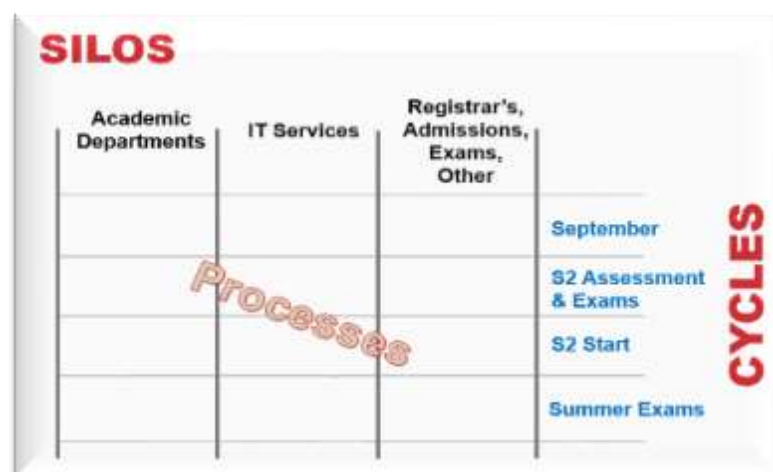
Figure 38: Silo mentality

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[34] Figure 75 and Figure 76 in Appendix B, from the RIO project, demonstrate the quantitative data captured.

As the IT Services team were the main drivers of process improvement through the use of Design Thinking, it was decided to focus inward and spend some time on internal house-keeping. Most of the existing scripts that connected IT systems had grown organically, but not optimally. One staff member claimed "when it does not work, we do not know how to fix it" and are then dependent on external suppliers rather than in-house expertise; "we would like to change this".

7.2 Data Gathering and Analysis

A project team was setup comprising four staff from IT Services. A brainstorming session was held to name the project, and Figure 39 was one output that resulted in identifying "Magnifeye" as the name, providing a virtual *magnifying lens* into the movement of data behind the scenes of the induction stage.

Figure 39: Mind-map[35] of project naming ideas

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[35] A tool for mapping thoughts, problems and ideas and their connections.

At the outset of the project, an opportunity arose for the author to take part in FaceMooc[36], a five-week online course on the challenges of co-design with case studies from expert mentors. Magnifeye was used as the author's case study and advice sessions from two co-design mentors[36] realised that co-design would allow CIT to navigate and understand the complexity of the service steps. Both mentors reiterated the importance of getting stories from the people involved and using these scenarios and stories to build the workshops. They emphasised the importance of empathy and using the sessions to see who felt connected, motivated to get involved and to solve problems.

Four team members from IT Services agreed on the project objectives in relation to the induction stage of the Student Lifecycle:

- Map every process, script, flow and exchange of information through the IT systems and applications.
- Exchange knowledge about all the processes and scripts, by means of a central repository.
- Identify the right problems to solve in a collaborative way, ensuring relevant outcomes.
- Deliver a number of quick-wins, and identify future opportunities and training needs.
- Improve the efficiency and effectiveness of service operations, while at the same time, delivering value to the end users.

Four planning meetings took place and a project plan outlined a number of workshops with proposed outcomes from each one. A project "team site" was setup on Microsoft Sharepoint[37] in order to share project inputs and outputs. The project was first presented to 22 IT Services staff at a group meeting, where a short overview of the objectives were shown to everyone, along with the project milestones. The project required input from all 22 staff members in order to share knowledge, highlight issues, discover opportunities, ideate and document all the back-stage processes.

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[36] A five-week online course for design professionals interested in co-design hosted by Imagination Lancaster. The two mentors involved were Cindy Van Bremen and Wina Smeenk, design lecturers at Technische Universiteit Eindhoven, The Netherlands.
[37] Microsoft SharePoint is an online collaboration and document management platform.

Following on from the planning phase and the presentation to all staff, the data was gathered in three separate streams with a further two streams devoted to taking action, ideation and implementation of ideas. Table 8 outlines the five streams and the number of workshops that took place in each stream.

Stream	Number of workshops
Co-Meet: initial meeting of all staff	1
Co-Map: mapping the back-stage process	3
Co-Define: defining the problems from all perspectives	1
Co-Storm: brainstorming resolutions to some of the issues	2
Co-Create: creating and implementing actions to resolve the issues	1

Table 8: Magnifeye streams and workshops

Stream 1: Co-Meet

22 staff members attended an initial kick-off meeting to map a number of scenarios and discover the facts and root causes, in relation to many of the existing problems. A trigger list of keywords (Figure 40) was sent to users in advance and then projected onto a wall to inspire people's thoughts and ideas. Users were asked to bring a story of dissatisfaction, frustration, annoyance or confusion in order to connect user stories and find commonality between them.

TRIGGER LIST

Signage, directions	QuickStart Guide	Smart Card Access -> labs, gym, parking
Queues	Online Delivery / Cloud Computing	Shared Drives
Other support staff: Admissions, Department Secretary, Card Office	CIT and myCIT Websites	Printing
Good Start - Just Ask!	Student Types: Full-time, part-time, postgrad, direct entry	WIFI
Orientation & Registration	Application Forms	Communication
Document Checking	AD Account	myCIT Email
IT Talks	Network Password	Day 1 of Semester 1
Banner	Password Self-Service	Web4Student
Login Email	Blackboard	Module Enrolment, CRNs
Timetables	Change of personal Details i.e. name, address	Fees & Online Payments
Paper forms		IT Services Handbook
CIT Smart Card		

Figure 40: Trigger list of keywords for the Co-Meet workshop

The workshop was carefully prepared and a number of new tools were investigated, testing them out in advance, on sample scenarios, to decide if they were suitable for the project. The *Framing: Research Questions*[38] tool from the SPIDER toolkit was tweaked to include the root cause and the person or group affected by the issue. Participants documented scenarios on cards, which were posted onto a wall in the project room during the workshop (Figure 41). This led to new facts arising and one example scenario was:

- Fact: Student accounts and enrolments are only synced nightly
- Emotion: This causes frustration for many staff and students
- Root cause: The script only synchronises once-a-day but there is no communication of this to students and some staff are informed by Web4Faculty, an administrative function that looks after student enrolments
- Who was affected: Primarily students, but staff were affected too

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[38] A tool to identify insights and define the existing problem.

Figure 41: Above, Co-Meet, where participants externalised facts and issues onto a wall in the project room; and below, a wall containing the Co-Map outputs

Stream 2: Co-Map

A further three workshop sessions took place with a total of 27 contributors (Figure 16, Chapter Three) invited to share knowledge, highlight issues, discover opportunities and ideate solutions. Staff from other key services such as the Admissions and Fees offices were invited to the project room to fill in any process gaps and map some of their issues. A *Service Blueprint* was used to document all the processes and scripts for the back-stage of the induction stage of the Student Lifecycle. The following key information was captured: the process name, inputs, outputs, systems, process

owner, data fields and any existing issues associated with the process. For each process, the communication breakdowns and barriers, problems and questions were summarised onto a wall (shown in Figure 41 to exemplify the design process rather than each individual output).

The workshop created a new energy and a collaborative mind-set, and surprisingly, for the first time, a complete map of the data flowing between each system, was generated. Participants identified 22 issues which needed to be assessed and investigated in more detail (Table 9 on p. 150 highlights four of these issues). Quick fixes were possible for some, whereas others required development or redesign of the existing process.

Stream 3: Co-Define

All participants at previous workshops were invited back to define the right problem(s). As shown in Figure 42, participants were divided into small groups and asked to read through all the scenarios from the Co-Meet workshop. They were then given 30 minutes to define the problem from four different user perspectives; a student, a lecturer, an administrative staff member and an IT Services staff member. They were then asked to review, select, and discard ideas and opportunities and identify what needed to change. Some of the outputs from framing the problem were:

- "As an IT service staff member I need....... a diagram or flow-chart on how user accounts, email, PC logins, all work together; a quick reference guide".
- "As a student I need........hands-on instruction on how to connect to WIFI".
- "As an academic staff member I need.....to know what information I need to pass onto students at the beginning of term".
- "As an administrative staff member I need.....to quickly find incorrect data such as students with an invalid date of birth or students who have holds on their accounts".

Colleagues were asked to create a *Wish List* in order to encourage open feedback and discussion at a later workshop, an example included: "I wish........there was centralised support to assist students for all issues so they do not have to walk all over campus".

Figure 42: Co-Define workshop

It took a number of weeks to transcribe all the workshop outputs into a presentable format. The data was mostly on post-it notes, postcards or large sheets of paper stuck to a number of walls in the project room. All the outputs were carefully photographed in sequence before being taken down from the wall and laid out in the project room. The *Service Blueprint* from the Co-Map session was captured from the wall into a spreadsheet and then ordered and numbered correctly, which involved further clarification with process owners. Data from the Co-Meet and Co-Define workshops was transcribed directly into the same spreadsheet, where it was analysed for common patterns, in order to categorise the issues into ideas and opportunities.

The lists of problems were categorised under the following headings:

- Data quality and timeliness
- Training, information and communication
- Technical
- Support
- Academic cycle and calendar

7.3 Taking Action
Stream 4: Co-Storm

Two further workshops were arranged with seven staff from earlier workshops, to brainstorm the documentation structure. The agreed output was a layering system of information. A *Service Prototype* was created in Microsoft OneNote[39] where four layers were used to capture all the existing knowledge. This knowledge funnel approach resulted in more detail as you traversed down through the layers.

- Layer 1: a *System Map*[40] of all the system integrations (Figure 43) and links to the other layers.

- Layer 2: individual process descriptions with key information for level one support, such as, how to test for normal functioning and who to contact if there was an issue.

- Layer 3: the troubleshooting layer, directing the user to the possible source of a problem and how to solve that problem.

- Layer 4: the development layer, containing detailed documentation with regard to source code, backups and change control.

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[39] Microsoft OneNote is an online collaboration tool to gather information from multiple users simultaneously.
[40] A map of the various actors and flows of data and materials through a system.
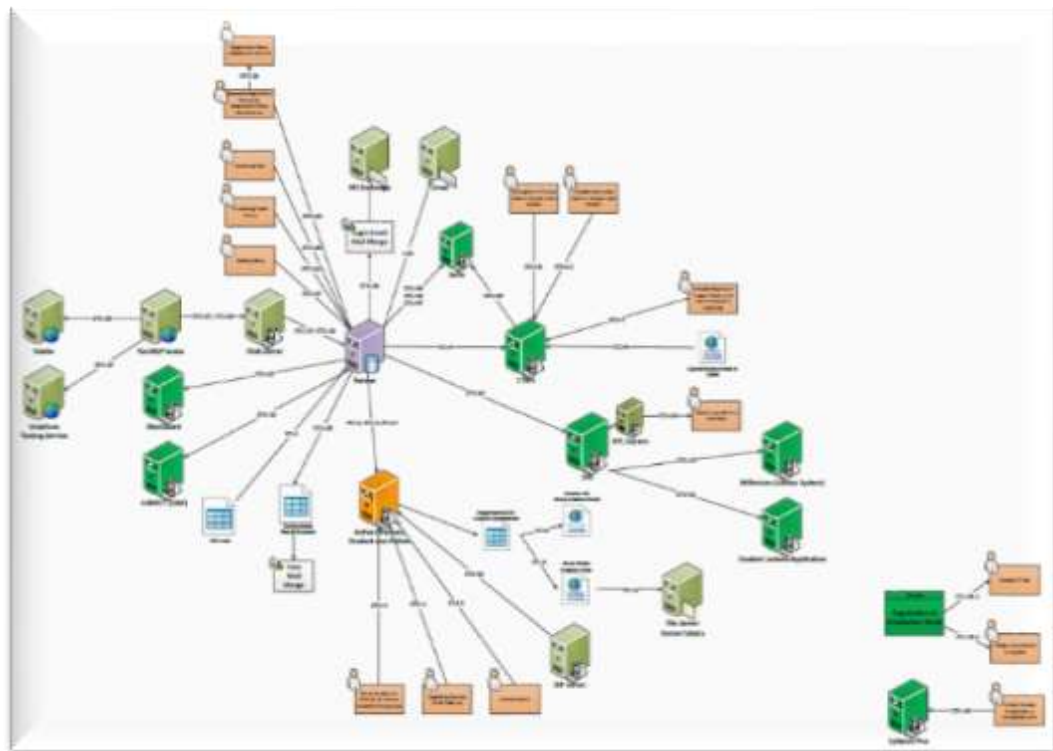
Figure 43: Layer 1 map of all back-end systems with a code on each connecting line (a larger visual can be seen in Figure 80 in Appendix B)

The author researched document naming conventions and numbering schemes, in order to construct a dynamic format, that could allow processes to be easily added or removed from the overall structure. A final format demonstrated in Figure 44 was used to number and order all processes, their layers and sections.
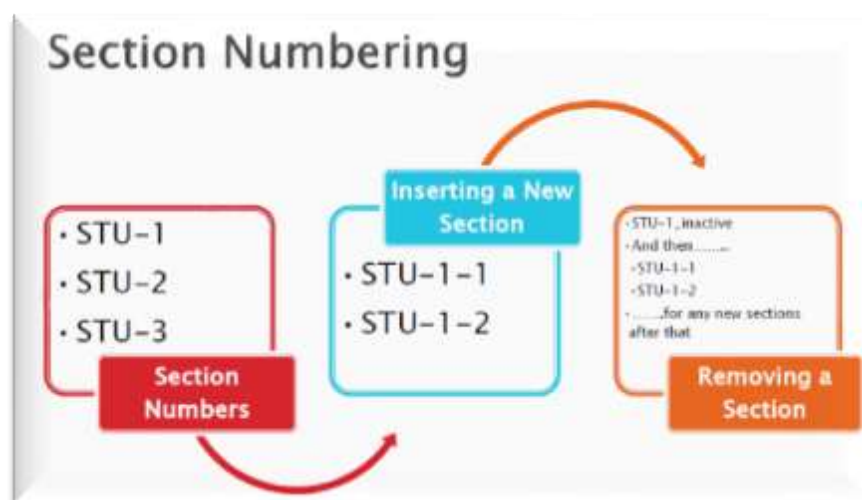
Figure 44: Numbering schema for documentation repository

In order to test the new procedure, five process owners in IT Services were asked to update each layer for one of their processes. Two information sessions were held with the original 22 staff, to instruct them on how to update the four layers. Many staff had their own documentation stored in a variety of repositories, so for some it was an exercise in migrating to the new location. A short guide (Figure 81, Appendix B) was created to help them update their processes and a spreadsheet was used to keep track of progress. The guide highlighted tips such as using short, concrete sentences, no surplus words or jargon and being easily read by a non-IT person. Bi-monthly meetings were setup up with the IT Manager and three senior technical officers to ensure the continuous updating of processes, identification of gaps, and ownership of quick-wins; and implementation of the same. Key process owners were given two months to update their documentation.

Stream 5: Co-Create

The final workshop brainstormed the issues that were highlighted in the Co-Meet workshops and identified short and long term ideas and actions. Some example issues were extracted and users were divided into groups to brainstorm and categorise each issue using the SPIDER tool, *Ideation, Idea Selection*[41]. As a result of this, an IT Induction Group was established, and made up of six IT Services staff. Their task was to take ownership for the 18 actions that emerged from the workshop and formed part of the *Action Plan*. Six meetings were scheduled between June and August 2015 to prepare and implement the actions for the September period. Table 9 presents four of those issues, and the actions that were implemented to resolve them.

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[41] A tool used to determine which ideas generate the highest potential for impact.

Issue	Quick-win
Dirty Data; incomplete or incorrect student registration information.	It was decided by the IT Induction Group, that during registration week, student data would be updated live in the student records system in order to eliminate delays in processing student registrations. This was led and facilitated by IT services but implemented by the Admissions Office.
No IT training for staff and students; in particular new first year students needed more hands-on IT training in relation to WIFI, using Blackboard virtual learning environment, using remote access to systems, and printing.	The IT Induction Group identified the need for a brand and "a catchy tagline for IT Services" so staff could be easily recognised and approached. For September 2015 t-shirts were ordered with the slogan "Just Ask IT" (Figure 45), and daily IT training sessions were setup for the first week of semester where students could come and receive help and step-by-step instruction.
Delays in students getting up-and-running quickly at the start of semester with regard to login details and module enrolments.	A *War Room*[42] was setup for the September period so that issues could be captured and dealt with as they happened. All staff involved in the process would meet daily for 20 minutes to brainstorm the positive and negative aspects and the opportunities from that day, using De Bono's *PMI* model. Figure 46 shows the outputs from one of the daily *War Room* events. This was

[42] A War Room, in this case, was a temporary physical space that provided a canvas to capture issues, ideas and opportunities for the next cycle of delivery. Those involved in delivering the service could co-locate to visually collaborate and problem solve for short 20 minute sprints.

	managed and guided by staff who had attended a previous workshop where they learned this new approach.
System integration, automatic scripts and manual tasks resulting in time delays and issues that were difficult to troubleshoot causing frustration for both students and staff.	Integration scripts that migrated data between some of the main IT systems, only happened nightly. It was agreed to increase these to twice daily, during busy periods, so that student records were up-to-date.

Table 9: Magnifeye issues and actions
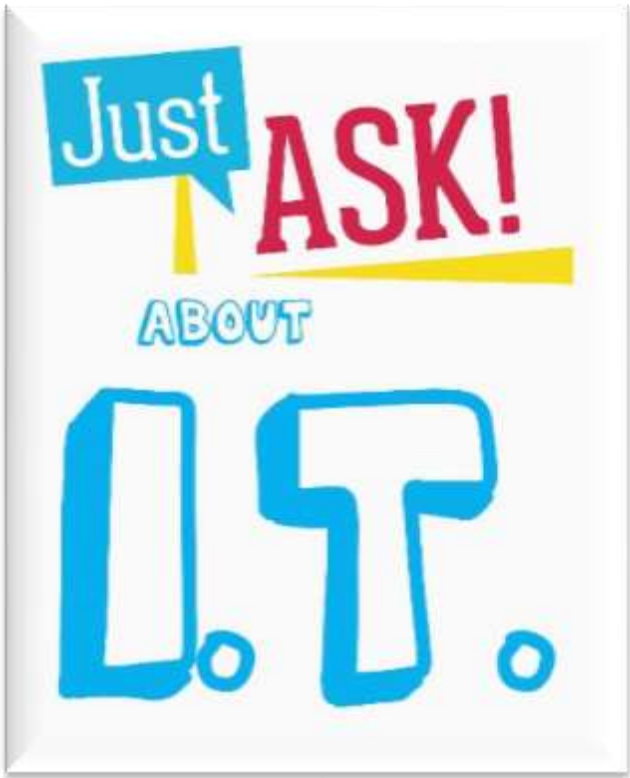
Figure 45: the new "Just Ask IT" logo created for the IT Servicedesk t-shirts

Figure 46: September War Room using De Bono's PMI tool (images are to demonstrate the process)

7.4 Evaluating the Action

Most of the actions involved mapping and documenting the existing back-stage processes. This was always done with a view to eventually redesigning the processes and integrating key systems. The outcome from this project resulted in 43 concisely documented and mapped processes, which resulted in quicker response times when troubleshooting issues. The documentation also provided clear guidance for any future development work and was a necessary activity. The problem that now existed was the lack of in-house capacity to redesign the existing processes while keeping the lights on.

The energy and attitude towards changing "how we do things around here" was different on this project because all staff identified with how small improvements could really improve both the student and staff experience. Process ownership came up as an issue in both RECAP and RIO, but it was evident during this project, that people were ready to take ownership. As the IT Services team did not always have control over processes outside their department, Magnifeye was seen as an opportunity to improve processes in their own area, while at the same time experimenting with some new tools and techniques.

The document repository (Figure 47) was seen as a huge step forward and it was now much simpler for all IT staff to quickly find details on a process, especially during the busy September period.
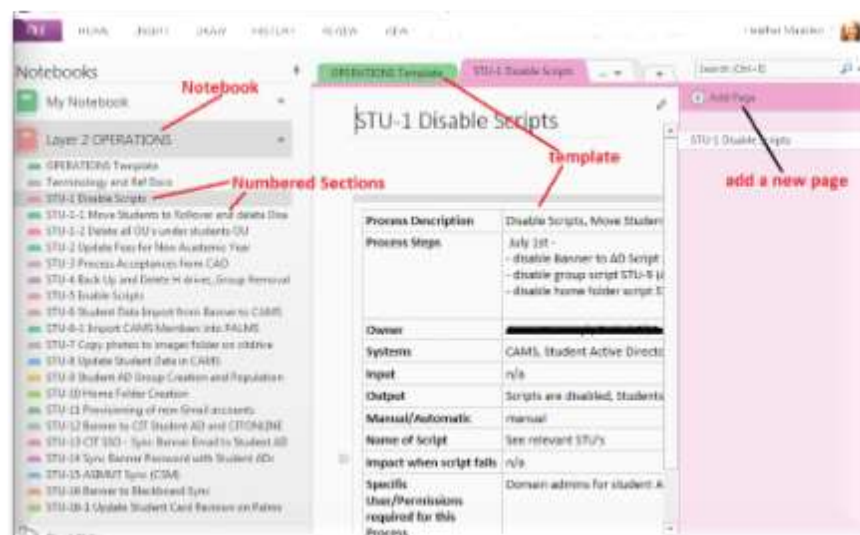
Figure 47: New repository for all documentation

There were many positive outputs and spin-off initiatives as a result of Magnifeye, especially the change in mind-set and approaching problems from the customer viewpoint. An example of one spin-off initiative was setting up a WIFI help desk during registration week, so that many connectivity issues could be resolved for new students, before all staff and students returned during the first week of term. Proactively dealing with issues, rather than waiting for queues to form at front-line services, was definitely an improved approach. The *War Room* system of capturing daily feedback and acting on issues immediately was a new approach, where previously numerous emails were sent over and back between many stakeholders.

Another spin-off was the establishment of an IT Induction Group, where a number of actions were implemented for September. Interestingly many of these spin-off initiatives were led by staff, who had attended workshops where they were introduced to Service Design tools. Many of the ideas that came up during Magnifeye required a joint effort across a number of departments and a report (Figure 48) outlining this was presented to the IT Steering Group for review.

Figure 48: the September 2015 one-page report (larger version in Appendix B, Figure 81 and Figure 82)

7.5 Reflection

The following success factors were identified early on in the project through the author's interactions on the FaceMooc course:

- Ensuring as many people as possible attended the sessions and workshops; 27 staff attended eight workshops and two information sessions.
- Building up trust during workshops by sharing the frustrations, and making the connection between those frustrations, resulted in clearer problem definition and well-meaning solutions.

- Focusing on the problems as a group for the first time, led to new insights, which resulted in group ownership of the problem, rather than always blaming other individuals or departments.

- Understanding the role of the author as a researcher and facilitator in helping to change some of the existing problems by means of simple initiatives.

At the end of this project, it was evident that not only were student-centred outcomes delivered, but more importantly, a process mentality change was achieved. It was clear that employee passion drives results and as demonstrated during this cycle, if employees have a sense of pride and ownership in the processes and want to make a difference, then positive change is realised. The *I Wish*[43] tool showed that staff really wanted to fix broken processes, even though in some cases it was out of their control, for example "I wish we had a robust student records system, aligned processes and data validation". This project inspired IT Services staff to work more productively as a team, rather than as individuals, and the value of co-creation and co-design was evident to them. It is certain that getting external advice and mentoring from the FaceMooc project proved invaluable and gave a different perspective on the project from Design Thinking experts who were outside the organisation.

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[43] A tool to pose questions to users and providers of a service to test future scenarios.

Chapter Eight | Cycle Five | Service Design Master Class

5/9/2014: Announcement from Irish Design 2015 and call for funding applications

30/9/2014: Made contact with Linzi Ryan from SPIDER project

16/10/2014: Organisers meet and set a date of 10th March for the Service Design Master Class

4/11/2014: Application for funding submitted to Irish Design 2015

28/1/2015: Attendance at Service Design for Public Sector event in Cardiff hosted by SPIDER project

April 15th and May 27th Two Follow-on Service Design Meet-ups

20/9/2014: Attended briefing by regional director for Irish Design 2015

Oct 2014: Researching and contacting SD experts in the region to co-mentor the event

20/10/2014: Attendance at Design Thinking one day event in Dublin to research ideas for Cork event

11/12/2014: Funding granted from Irish Design 2015

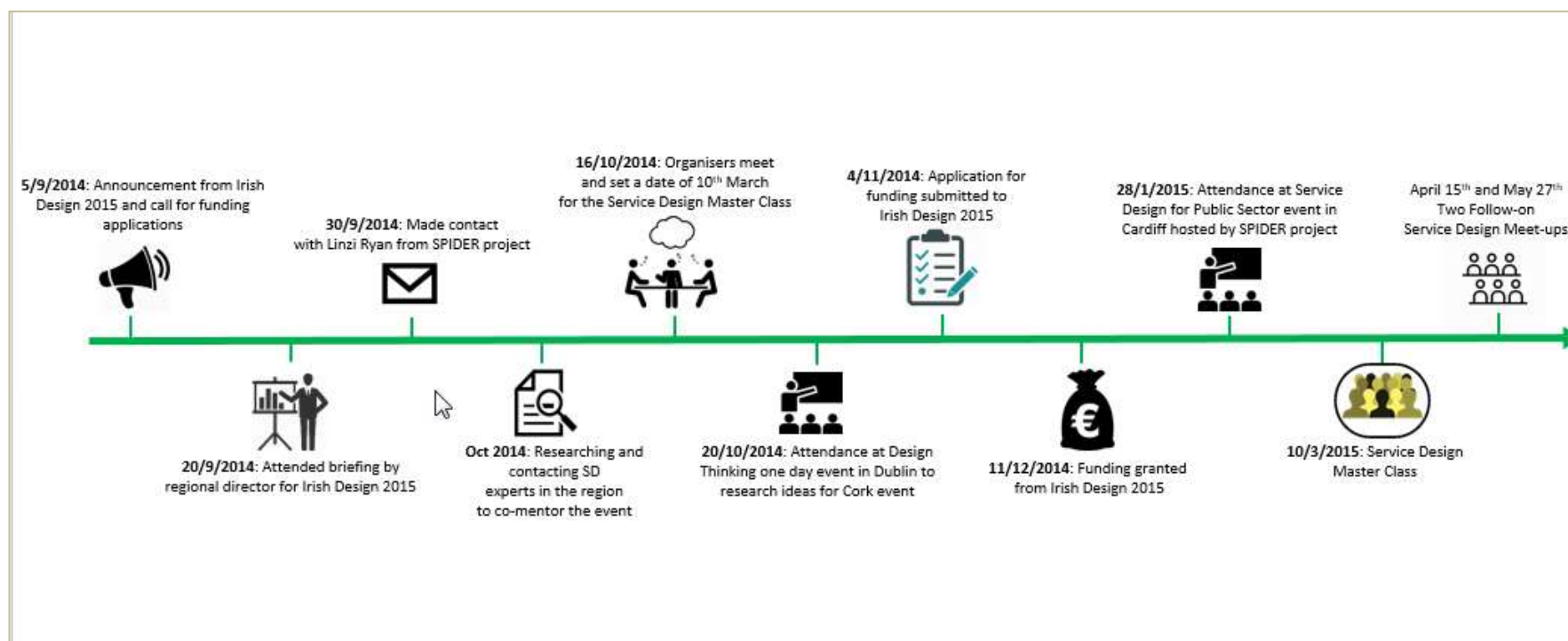**10/3/2015**: Service Design Master Class

Figure 49: Service Design Master Class timeline of activities

8.1 The problem

During the first four cycles, it became clear that in order to embed Design Thinking within an organisation, the next step was to get some willing supporters on board. In many organisations like CIT, there are staff who need a better way to do things, but are unsure where to start and are lacking the necessary tools and techniques.

2015 was announced as the year of Irish Design as part of the Irish Government's action plan for jobs. The year-long programme sought interested parties, to raise the profile and the benefits of design, by hosting a series of events and workshops. Initial research and networking revealed that very few Service Design practitioners existed in Ireland, and in particular, the Cork region. The antidote was to organise an introductory Service Design event for a cross-section of people, from the private, public and higher education sectors in the Cork area. A workshop was a means to introduce tools to the participants, to allow them to exploit their own knowledge, experience and creative potential resulting in relevant, innovative and practical solutions in their own work or daily practice.

The project team which consisted of the author and a co-organiser from CIT, the same staff member seconded for the Student Lifecycle project, devised the objectives for the event; to introduce participants to:

- Service Design as a methodology to enable them to solve simple and complex problems using new ways of thinking, seeing and hearing;

- A user-centred holistic approach to improve and innovate services or products; *and*

- A set of tools and techniques to solve business problems and create value.

8.2 Data Gathering and Analysis

The project team made a submission for funding to Irish Design 2015 in order to deliver a one-day event to Cork-based participants, with a view to setting up a Service Design community in Cork. Input to the submission was sought from key stakeholders within CIT, and Linzi Ryan from the SPIDER project, who agreed to be the primary host for the event. The SPIDER project was also seeking to educate public servants in Service Design tools and techniques, at the same time across Ireland, so the two

initiatives became a co-operative cause. The author attended a one-day Design Thinking immersion course in Dublin and "Service Design for the Public Sector", a conference in Cardiff to research ideas for the Cork occasion[44].

The Service Design Master Class was advertised to a wide Cork community and sought to educate a minimum of 50 participants, including 10 CIT employees, in Service Design tools and techniques. A number of local Service Design experts volunteered to host the event, along with some international experts[45] from a variety of settings, who provided guidance to the participants on the day.

Although many managers have various ways of delivering change and benefits to users and customers within an organisation, it is believed by many authors (Battarbee et al., 2014; Liedtka, 2011) that in order to embed Design Thinking as a new methodology, then a number of design champions would be instrumental. The author hoped that these design champions would emerge from the Master Class and become Service Design enthusiasts.

8.3 Taking Action

The event was carefully researched, planned and organised by the project team and included promoting the event on LinkedIn, Twitter and Facebook channels and through word-of-mouth. As Service Design was relatively new in Ireland, an event invite (Figure 85, Appendix B) was drafted in order to sell the event to people who had never heard of Service Design. The choice of venue was important and many city centre locations were researched. It was important that the venue inspired creativity but was also in a central location where participants could go out on the streets to perform user research in relation to the design challenge. The selection of a design challenge was crucial; generic enough to be easily understood by all participants and simple enough to be worked through, over the course of one day.

A professional photographer was booked and refreshments were ordered; even the lunch supplier was carefully selected based on the creative story behind their food business. Stationery including post-its and markers were ordered and large A2

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[44] A full list of training events and conferences attended by the author is available in Appendix C.
[45] The agenda for the Master Class along with biographies of the hosts and experts, was included in the participant pack, and can be seen in Figure 84, Appendix B.

versions of the tool templates were printed. As the Service Design experts were volunteering their time on the day, gift-cards were ordered for them as a gesture of gratitude. In order to create a collaborative environment, round tables were ordered from an event management company and the room layout was carefully planned.

A number of conference calls between the project team and some of the Service Design experts resulted in the agenda for the day (Figure 84, Appendix B). The Service Design tools were carefully chosen and in conjunction with the SPIDER project, the following five tools were selected:

- Warm-up challenge, observing the experience of one participant eating a yogurt
- *Framing: Research Questions*
- *Service Concept: User Journeys*
- *Ideation: Lotus Blossom*
- *Ideation: Idea Selection*

An event pack was created for all participants, which contained a biography[45] of each of the Service Design experts, a Service Design glossary, an overview and description of all the tools used on the day, as well as links to tools and techniques online. Student interns were recruited for the day to promote and publicise the event on Twitter.

Participants were divided into groups of six, to take on the design challenge of redesigning the take-away coffee experience. Master Class participants observed coffee drinkers all over Cork City. From espressos to cappuccinos to flat whites, coffee drinkers are discerning about their coffees. It is not just the type of coffee that concerns customers but the kind of cup, the type of bean, the smell of the coffee, the greeting and general banter with the staff, the lid for the cup, and even the "latte art" on top. Participants then used Service Design tools to gain insights into the coffee drinkers' experience and to explore new ideas for meeting coffee drinkers' needs.

Participants were given a set of guidelines for the Master Class:

- No hierarchies; everyone is equal
- No fear, have fun
- Every idea is a good idea
- Forget the barriers and problems

- Forget all you know
- Imagine the impossible

8.4 Evaluating the Action

Training in Design Thinking skills, is the first step, towards people understanding how to apply these tools directly to their own situation. Interestingly, feedback from participants (Figure 52) at the Service Design Master Class was very positive, and colleagues from CIT who attended the event, could see the direct application of tools they had just learned, in their own departments. It heightened people's awareness of the need to co-design services with the users of that service. It was realised after this cycle, that ongoing support and guidance was needed, for the various departments that were interested in exploring new tools and techniques.

Figure 50: On the left, Master Class participants at the event; and on the right some of the tools in use
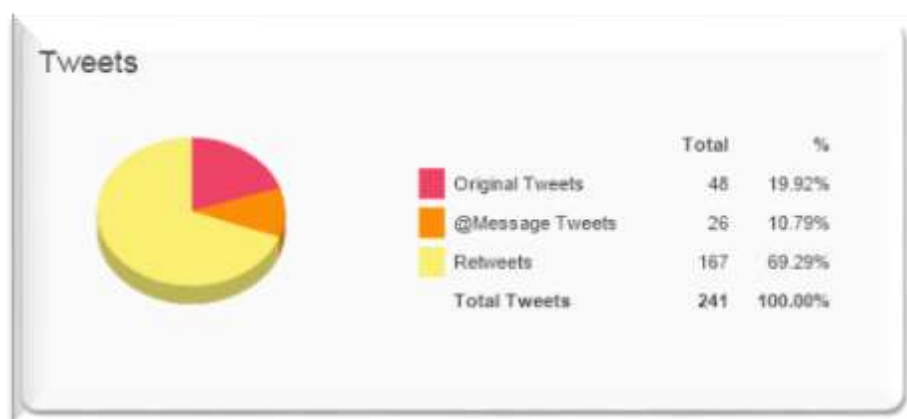

Figure 51: Total exposure on Twitter for the event

Figure 52: A feedback form from one particular participant

The event opened up design to people that may not normally have considered it before and they realised that design resources and tools are available to everyone. One participant noted that "it teaches you to take a step back and question why you are doing things a certain way" and another added "we can apply Design Thinking to problems we encounter every day". The participants got direct exposure to designers in the form of the eight mentors who volunteered for the day.

Post-event promotion was done via social media, example shown in Figure 53 and a press release was issued by CIT's Marketing department (Figure 86, Appendix B). A video[46] of the day was recorded, edited and published online and used to promote further events and meet-ups. The event established a foundation for the on-going development and promotion of Design Thinking, across a range of sectors by:

- Introducing participants to a new unique set of tools and methods.
- Promoting Service Design and Design Thinking as a methodology to be used by any sector.

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[46] Video of the event can be seen at: https://youtu.be/U6rQgTIArdU

- Providing participants with the tools to understand their customer or user journeys and redesigning those customer experiences in order to deliver positive outcomes.

Figure 53: Service Design Master Class post-event promotion on Facebook

All participants were given the option of a follow-up Service Design consultation. Two follow-on Service Design meet-ups, on April 15th and May 27th, introduced participants to more tools. Six participants worked through the *Persona* tool at the first meet-up

and seven participants got to grips with the *Storyboarding*[47] technique, at the second meet-up.

8.5 Reflection

In order to sustainably try to embed Service Design tools and techniques and change the mind-set of "how we do things" at CIT, it was clear that this once-off event needed to progress into more regular training events, supported by some type of an internal mentoring service.

What was really clear from this event, is that participants learned to think more about challenging their assumptions and seeing their business problems differently. They discovered how empathy with users can lead to well-designed services that deliver better experiences and value to customers.

Furthermore, this was a learning opportunity for the author to see how other organisations teach the methodology of Design Thinking and bring that learning back to her own organisation, in order to create new ways of working.

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[47] A storyboard is a representation of a service and its use cases using a series of drawings and pictures.
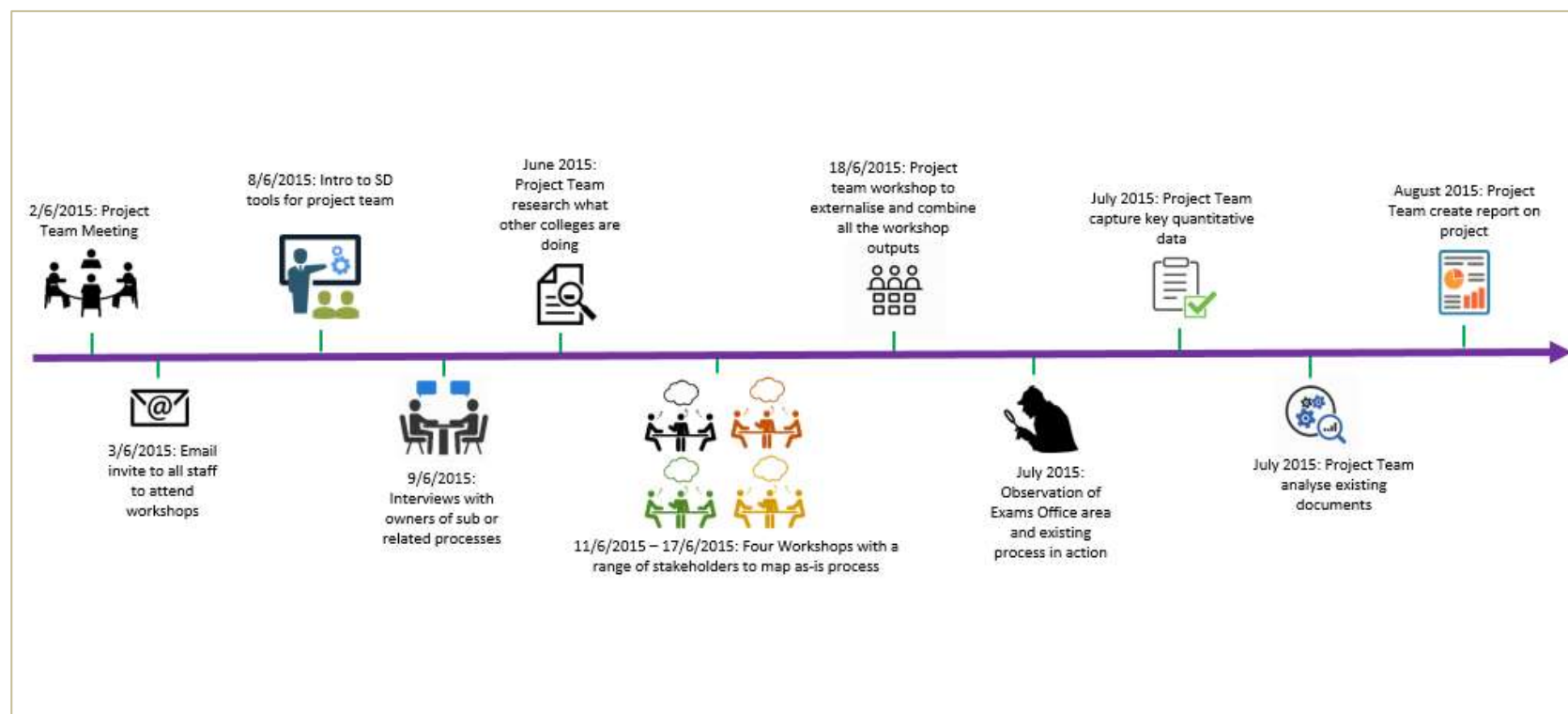
Chapter Nine | Cycle Six | Exam Paper Submission

Figure 54: Exam Paper Submission Project timeline of activities

9.1 The problem

By April 2015, in addition to introducing a new project review process, CIT's IT Manager decided that all internal requests for digital solutions would go through a Design Thinking process. Exam Paper Submission was the next project that seemed a perfect fit for this methodology. The Registrar's Office was looking for an IT solution to fix an existing problem; the processes and procedures around the submission of exam papers by academic staff. In total 1,377 exam papers were submitted to the Exams Office during the academic year 2014-2015. The process lacked guidelines and training with regard to the preparation and submission of papers. There were numerous security issues with the storage and transmission of papers, including the fact that they needed to be handed in by hard copy to the Exams Office. Busy timetables made it difficult to collaborate on exam papers for shared modules, and the lack of an online solution resulted in lecturers having to sit down in person to draft and review a paper. The existing culture was accustomed to the Exams Office fixing and editing papers before they went to external examiners and then for final printing. In particular, the exam paper cover sheet which contained important information, such as module code, title and lecturer name, was consistently wrong.

Two previous reports were analysed, an internal audit report from 2013 and a separate process review by an academic staff member in 2008, which both highlighted a number of risks and made a series of recommendations, not yet implemented. The administration process was a huge overhead and many of the issues that existed related back to the lack of guidelines and training. The process for dealing with external examiners was very manual, labour intensive and prone to errors. Deadlines were not adhered to, leading to delays in the downstream process, which placed huge pressure on the Exams Office, to deliver the exam papers for the busy exam period, three times a year.

9.2 Data Gathering and Analysis

As a result of learning from previous projects, this cycle started with a much more structured project setup. A clear project plan defined key roles and responsibilities for the duration of the project. The project team was established and contained a project

sponsor, three staff from the Exams Office and four staff from IT Services including a student intern who was on work placement.

The project team brainstormed around how the existing service could be improved for academic staff, external examiners and Exams Office staff. They formed the following objectives which were approved by the project sponsor:

- Analyse and improve the exam paper submission process so that it is robust, secure and efficient
- Ensure the current procedure for submitting exam papers is clearer for all lecturers and increase the number of exam papers submitted from weeks three to six[48] by 50%
- Reduce the time spent by the Exams Office on checking and amending inconsistencies in exam papers by 50%
- Reduce queries to the Exams Office by 50%
- Provide a solution for internal and external examiners to easily collaborate on exam papers
- Allow full tracking of exam papers from submission to sign-off

For phase one of the project, it was agreed to focus on analysing the existing process. This would involve defining the right problem, involving all stakeholders in some collaborative workshops, identifying quick wins and implementing those quick-wins, along with making some recommendations for further project phases. An introduction to Service Design tools, to be used during the project, was presented to the project team and seven Exams Office staff, in particular *Service Blueprinting* (Figure 55).

Six unstructured interviews took place with stakeholders involved in sub-processes, or related processes, in order to agree the boundaries of the project. The project team observed all of the existing process and sub-processes and any relevant documents were analysed as demonstrated in Table 10. Quantitative data was captured such as the percentage of part papers versus shared papers, the percentage of packages returned from external examiners and the number of late papers submitted by each academic department.

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[48] Each academic year contains two semesters with 13 weeks in each semester.
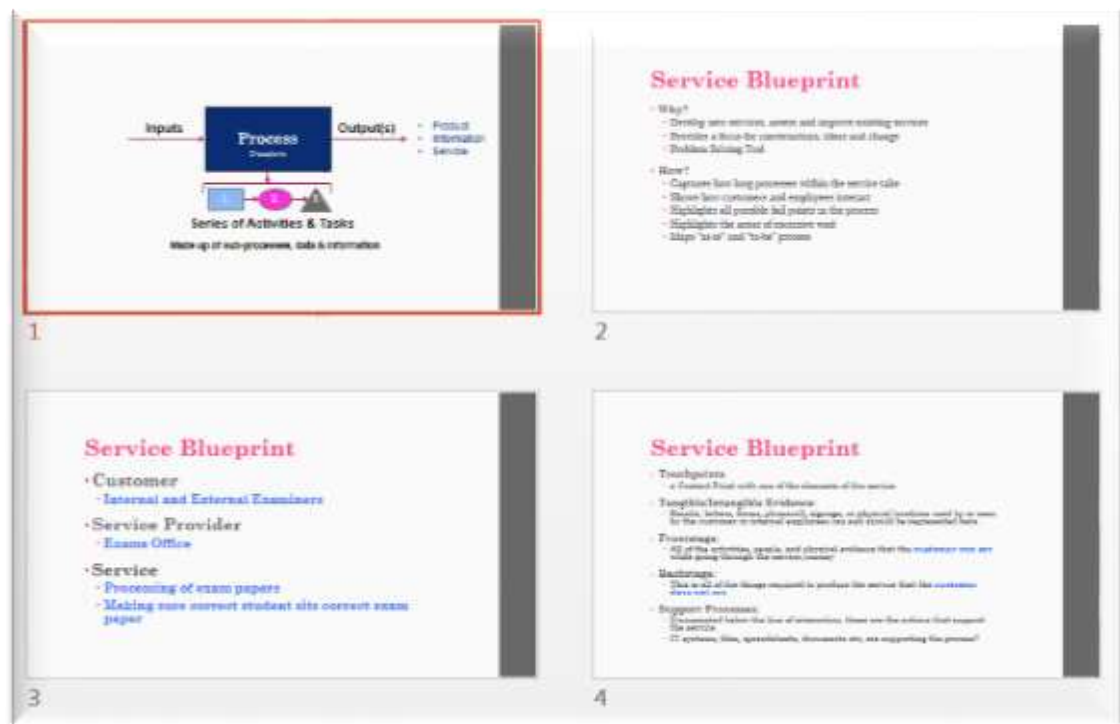
Figure 55: An excerpt from the presentation to Exams Office staff

		Method		
	Observation	Unstructured Interview	Analysis	Shadowing
Process				
External examiner process		●		
Recording of MP3 exams for students with learning difficulties		●		
Submission of exam papers by internal examiners	●			
Exam paper-fixing process		●		●
Recording in the log book for tracking exam papers		●		●
Preparing, packing and sending of papers to externs		●		●
Sorting of exam papers into colour co-ordinated folders, ready for photocopying (Figure 56)		●		●
Documents				
Log books for recording details about the submission of each exam paper and the recording of letters and papers sent to external examiners			●	
External examiner lists			●	
Exam paper templates			●	
Instruction emails sent to all academic staff			●	
CIT's Marks and Standards policy			●	

Table 10: Processes and documents as part of the Exam Paper Submission process

Figure 56: On the left, observation of the fixing process and on the right returned packages containing exam papers not delivered to external examiners

Figure 57: Exam papers sorted into colour co-ordinated folders in preparation for physical sign-off by lecturers

An email invite was sent from the project sponsor to over 1500 staff across the college, inviting them to participate in workshops to document the *as-is* process. This involved mapping all the actions and *touchpoints* from both the front and back-stages. The goal was also to define current challenges and problems, gather insights and feedback and brainstorm possible outcomes. The workshops were carefully planned but a last minute idea of creating a *Wall of Pain*[49] (Figure 58) in the project room, to empathise with the problems and pain-points of 31 workshop participants; proved to be very popular. An *Issue Card*[50] template was provided to the participants where they highlighted a single fact or issue and the root cause for this issue on each card, an example is shown in Figure 58.

Figure 58: On the left, the Wall of Pain; on the right, one of the workshop outputs: a "fact" and associated "root cause"

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[49] Similar to a *car-park*, it involves a large blank wall that can be used to post pain-points during a workshop, and categorise them from low to high.
[50] A tool where each point on a card could contain an insight, a drawing or a description of a scenario, or simply a "fact" and "root cause".

Figure 59: On the top, staff attending one of the Exam Paper Submission workshops; and below, collating the workshop outputs into one *Service Blueprint*

The outputs from the three workshops were collated into one *Service Blueprint* (Figure 59), which clearly highlighted all the *fail* and *wait* points during the process. Some of the key pain points as identified by lecturers and Exams Office staff included:

- "Lecturers' forget to sign-off on their exam papers and less than 50% do so".
- "It can be very difficult to meet and collaborate on shared papers with colleagues due to timetables".
- "We are not sure what to put on the front of the paper; module codes, extern names etc".
- "If a course code or lecturer's name is missing from the exam paper, it can create anxiety in the exam hall".
- "We have to physically call to the Exams Office to hand in exam papers and if I am writing 10 papers then I will wait to submit them all together".

Some possible outcomes identified by stakeholders during the workshops included:

- "We would really like an exam paper template where the cover page auto-populates".
- "We need clearer guidelines for formatting exam papers".
- "We should receive confirmation whether an extern returns feedback or not".
- "It should be possible to electronically sign-off on exam papers, rather than walking down to the Exams Office to physically sign something".
- "We need to get rid of memory sticks as they are a huge security risk".

A key aspect of this project was using the methods of *Shadowing*[51] and *Observation*[52] to assess what was actually happening on the ground. This involved sitting in the Exams Office during busy periods to take notes and photographs and assess what was happening at the front and back-stage. One observation noted that the email communication from the Registrar's Office was often ignored and was considered to be advice and not policy. It was noted that the scanning of USB sticks containing exam papers can cause considerable delays at the Exams Office front desk, especially during

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[51] A research tool to observe front-line staff or customers in their day-to-day environment.
[52] A tool to observe users or customers interacting with a service or product.

busy periods when many staff arrive at the same time. The fixing and editing of exam papers can take approximately 40 man days, which then causes delays in the papers being sent to externs. All of the observations were analysed and mapped into a spreadsheet along with the facts and root causes from the Wall of Pain. Finally all the facts, issues, user stories, observations, conversations, needs, pain points, fears and motivations were externalised onto a large wall, where they were then categorised under the following headings:

- Guidelines and training
- Communication
- Transmission, storage and security of exam papers
- Creation of exam papers
- External examiner process
- Fixing and general administration of exam papers
- Deadlines and sign-off of papers

9.3 Taking Action

The first output from this phase was the final *Service Blueprint,* (Figure 60 and Figure 87 in Appendix B) co-created in the workshops, collated by the project team and visualised using Microsoft Visio. The project team collaborated and externalised everything onto a large wall and spent some time absorbing all the details. The team then brainstormed with regard to possible quick-wins and a list was identified and agreed by the team, which included:

- A checklist for lecturers
- An online site with all information, templates and guidelines
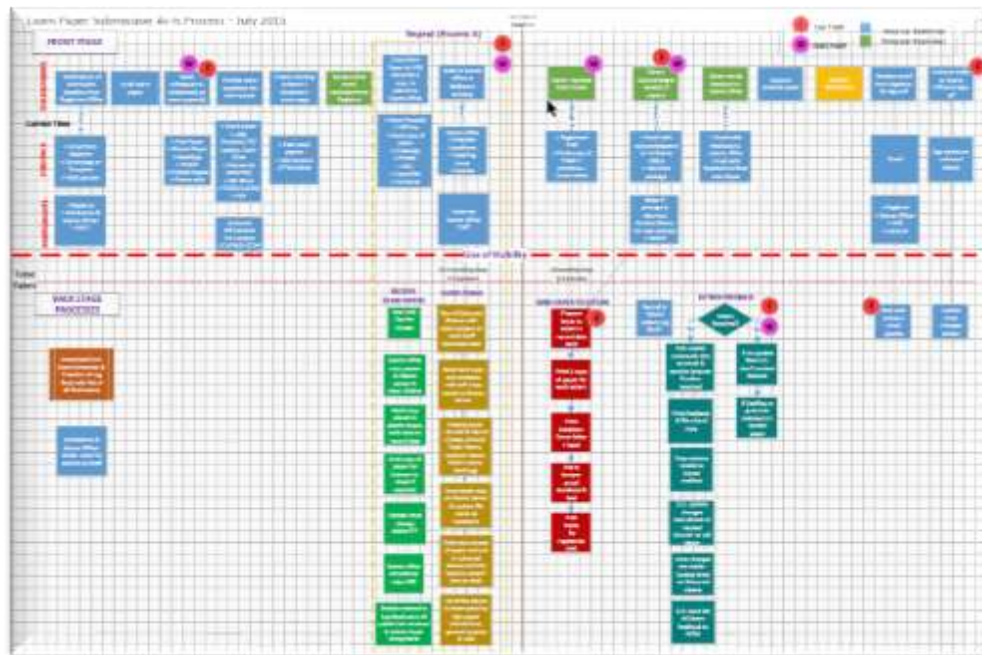- Enforcing existing deadlines

Figure 60: Final *Service Blueprint* of the *as-is* process

The quick-wins were then prioritised using a priority matrix (Figure 61) and a scoring mechanism was applied to each item. For example, the large number of versions of the exam paper template, meant that instructions from the Registrar's Office were unclear. One high priority and high impact quick-win that was identified, was a new online information site, containing a master template and video instructions for each step of the process. Another item considered to be low hanging fruit was to increase the processing power of the PC used at the front counter of the Exams Office so that USB keys could be scanned quicker. It was important for existing rules to be enforced by all Exams Office staff, and to develop some uniformity and consistency for dealing with late submissions, and papers that were missing key information on the cover page.
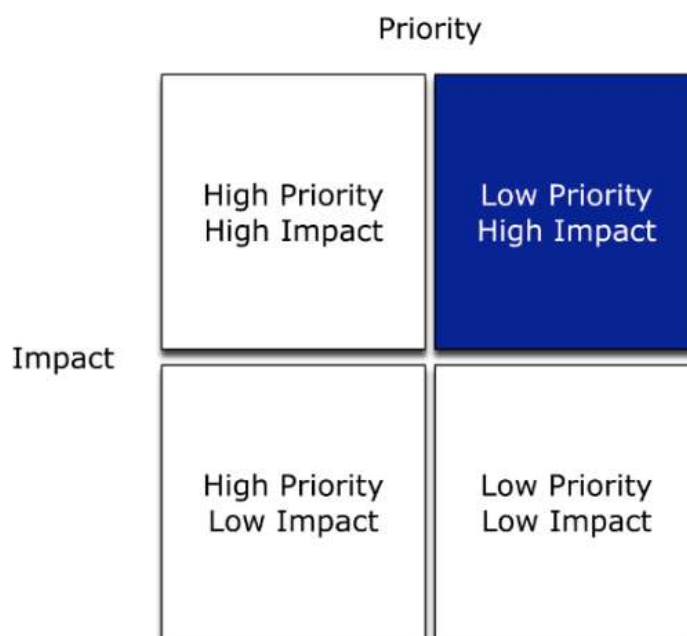
Priority

Figure 61: Priority Matrix used to prioritise actions

A 30-page report was compiled by the project team in order to close out phase one. The report gave an account of all the data that was gathered and the quick-wins identified. It also summarised the main issues as follows:

- Lack of accountability and managerial support: for example, each year over 48% of papers are submitted late and often exam papers are submitted within days of the examination taking place.
- Lack of policy and procedures: a separate procedure or policy needed to be put in place with regard to exam paper storage, transmission and submission.
- Lack of training: the feedback from workshops suggested that lecturers were not clear on how to submit an exam paper correctly.
- Security concerns: there was no clear policy on how and where exam papers should be stored which meant that multiple methods were being used.

The report unearthed that there was a lack of guidance and training on how to produce exam papers, resulting in general confusion among the academic community. While there are procedures in place, much of this needs to be reviewed and updated. Without proper documented procedures for the exams process, it is open to ambiguity, prone to errors, and is impossible to ensure accountability. The

report outlined further phases of work which included the implementation of the quick-wins, the design of a to-be process, a tender process for a suitable digital solution and a pilot implementation phase of the same solution.

9.4 Evaluating the Action

As highlighted in the literature review by Design Council (2013) and Snook and Design Managers Australia (2014), change cannot happen if there is no space for design-led innovation. Organisational culture is central to the running of an organisation and from the analysis of the current processes, in relation to exam paper management, there was a requirement for a huge cultural shift, in how processes and procedures were adhered to. Even though some processes are outlined in policy and procedure documents, they were not always followed. For example, almost 50% of all exam papers were submitted beyond the submission deadlines. It is expected that setting up a Governance Group inclusive of Senior Management, Exams Office staff, IT Services and academic personnel will encourage a shift in culture in relation to the management of exam papers. The Governance Group would act as champion for the project and encourage change where needed. They should also act as communicators for the broader community affected and be a platform for feedback throughout the project.

At the time of writing this thesis, the quick-wins had not been implemented due to staff leaving the Exams Office and the office being too under-resourced to continue with the project. The learning from this cycle was that there was an appetite for change to the existing exam paper submission process but no space, time and resources to do so.

9.5 Reflection

One of the main challenges of this project was allocation of resources. From the beginning, Exams Office staff did not have time to work on this project as the demands of operational activity and daily tasks, far exceeded expectations. This led to IT Services driving the project due to a lack of project experience in the area and staff overloaded with day-to-day operations.

While an online solution is needed, most of the issues uncovered were not of a technical nature and were more process and service based. These issues will need to be addressed before a digital solution can be put in place. Although the project did not proceed to phase two and the quick-wins were not implemented, the methodology of Design Thinking created a new approach of spending time in the problem space, which proved hugely valuable during this cycle. Once the project is ready to progress, the time spent during the "discover" and "define" phase will prove invaluable and the insights and information gathered, can quickly move the project into the "develop" phase. A shared understanding of purpose and vision for this project is essential, which recognises the impact of changing work practices for over 1000 academic staff.

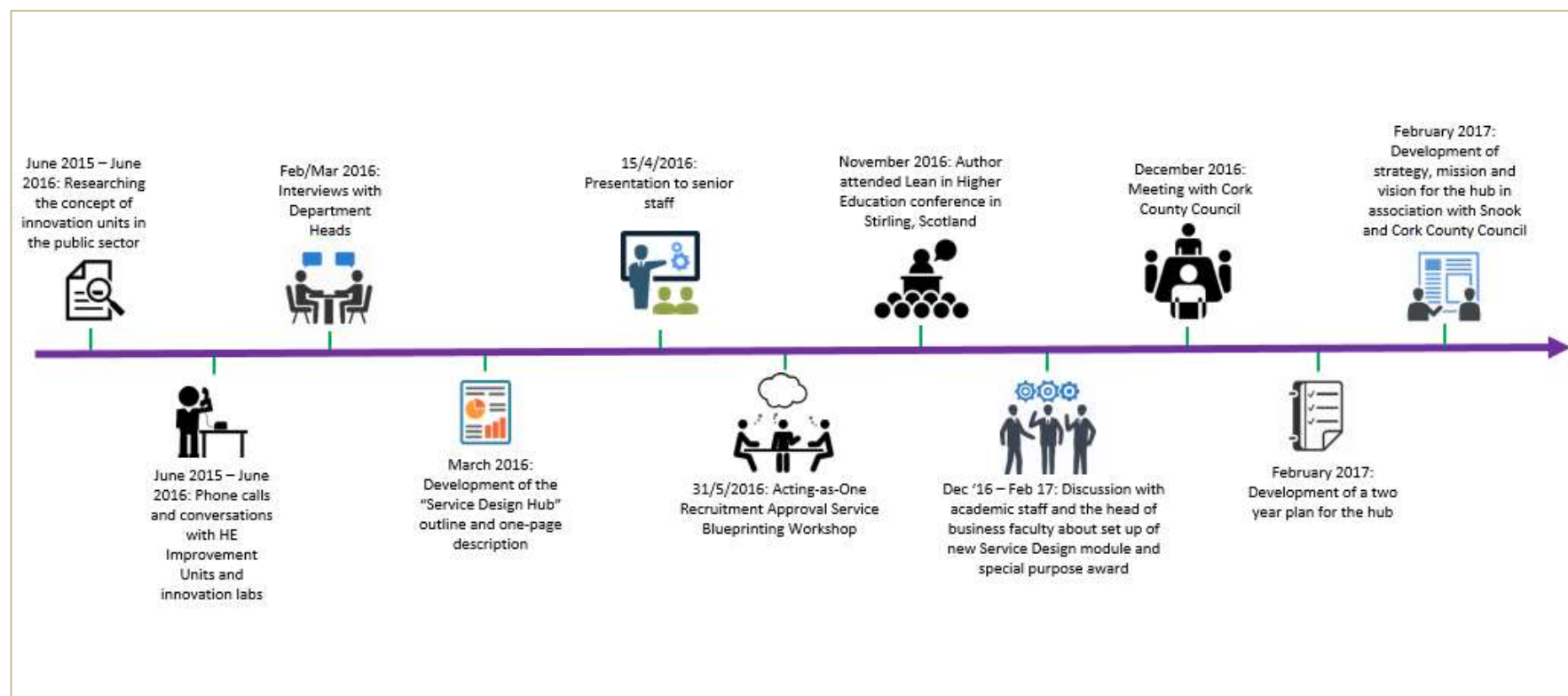# Chapter Ten | Cycle Seven | Service Design Hub

Figure 62: Service Design Hub timeline of activities

10.1 The Problem

The informal introduction of Design Thinking as a new way of working was not sustainable, and there was a need for an institute-wide change initiative. One of the guiding principles of the Government Digital Service in the UK is that there is "no innovation until everything works"[53], so they set up a team to focus on transforming user experiences across government services. At CIT, key front-line services are so busy with day-to-day fire-fighting, that they need guidance, expertise and support, to enable them to collaboratively redesign their existing services. As highlighted by one senior staff member "as the Institute is scaling up, the processes that supported 200 students will not support 800 students".

It was clear from the progress made across the first six cycles that CIT needed to:

- Analyse existing processes and services;

- Design and develop new user-centred services;

- Engage people to solve day-to-day problems; *and*

- Embed Design Thinking to enable cross-functional conversations, ideas and change.

Slapping on a fresh coat of paint and making a few repairs was not going to address the underlying problems. Without a senior management campaign, Design Thinking would neither have the reach nor impact required to change "how we do things around here". A formal and central resource was needed to help drive the initiative to the next stage of delivering value and outcomes, for both staff and students at CIT. The old tools were not up to the complexity of the challenges faced, new approaches were needed that could deliver real results.

10.2 Data Gathering and Analysis

A number of conversations and informal interviews were conducted with external stakeholders to gather evidence, and learn from established higher education process improvement units and public sector innovation labs. Many of the higher education

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[53] One of three guiding principles introduced by Russell Davies, former Director of Strategy at Government Digital Services.

units were specifically using Lean[54] tools and techniques and the innovation labs seemed to be more focused on human-centred design methods, or systems thinking, in the case of the Alberta Co-Lab. In Ireland, both University College Dublin (UCD) and Royal College of Surgeons (RCSI), are at early stages of setting up continuous improvement or Lean teams. Both have senior level buy-in, a willingness to commit resources to the initiative and train those resources in new tools and techniques, in order to pilot a proof of concept. Many of the universities have used the St. Andrew's University Lean model, experience and expertise, to setup their Lean teams. Attendance at the Lean in Higher Education conference in Stirling, Scotland, in November 2016 revealed like-minded individuals and teams in similar organisations who are identifying improvements on a daily basis in order to accelerate change. Informal phone interviews were conducted with eight universities, two innovation labs and one design consultancy and their learnings and advice is summarised in Table 11 and Table 12.

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[54] Lean is a process of continuous improvement tools and techniques primarily used in manufacturing industries.

Higher Education Institutions			
Person	**Role and Organisation**	**Date**	**Key Discussion Points**
Rachel McAssey	Head of Process Improvement University of Sheffield	22/5/2015	• Proof of concept projects are very worthwhile when starting out, in order to demonstrate the benefits and build trust amongst stakeholders. • Advocates and supporters in the form of senior sponsors is critical. • Process improvement is a journey that people grow towards, in terms of their thinking, and that journey takes time. • In order to change the culture, get the low hanging fruit and shout loud about your success stories. • Training is essential and allows people to do the improvement work themselves. • 80% of issues can be fixed by clarifying process and improving communication and 20% with an IT solution. • Baseline data and metrics, captured upfront, can really build support and evidence for efficiencies and improvements.
Steve Yorkstone	Senior Consultant Edinburgh Napier University	2/6/2015	
Bianca Shaw	Deputy Director of Assessment University College Dublin (UCD)	5/6/2015	
Doreen Gilfedder	Financial Controller Royal College of Surgeons in Ireland (RCSI)	22/6/2015	
Mark Ritchie	Deputy Director and Head of Project Services University of Edinburgh	5/11/2015	
Heather Lawrence	Business Improvement Manager University of Strathclyde	12/11/2015	
Robert Dowling	Director of Engagement and Transition University of Nottingham	25/5/2016	
Simon Collier	Solutions and Standards Manager University of Alberta	13/7/2016	

Table 11: Summary of key learnings and advice from higher education institutions

Innovation Labs			
Person	**Role and Organisation**	**Date**	**Key Discussion Points**
Philippe Coullomb	Co-Founder Where To From Here	19/5/2015	• Be prepared to pivot every three years. • Measurement is critical; it is important to identify metrics at the beginning of an engagement and always try and show a monetary saving. • Network and learn from other innovation labs. • Look out for champions; work with the willing and recruit people into this way of thinking. • Create a physical space. • Create a community of practice; which will build internal capacity. • Create a list of criteria for new projects, for example, participants must be willing to reframe the problem. • Be transparent and publish case studies.
Dr. Alex Ryan	Senior Systems Design Manager Alberta CoLab	26/4/2016	
Sydney Smith-Heimbrock	Executive Director Innovation Lab @ OPM	13/12/2016	

Table 12: Summary of key discussion points with innovation labs

At the same time, seven department managers were interviewed in their own offices (Figure 63), to get a sense of the immediate issues waiting on their desks; the stuff that was keeping them up at night. A set of questions was designed for the one-hour sessions in order to make the best use of their time:

1. What are the key bottlenecks in your department?
2. What is the biggest paper pile on your desk?
3. What do you think are the reasons for inefficient processes in CIT?
4. What do you see as the cause of administrative tasks?
    a. Paper forms, for example, extenuating circumstances forms, registration forms, social welfare forms
    b. Tracing and fixing incorrect or dirty data
    c. IT systems
    d. Inefficient processes
5. If you could improve one process, what would it be?
6. What is your busiest period during the academic year?
    a. Prospect
    b. Application
    c. Registration
    d. Education
    e. Graduation
    f. Alumni
7. What do you think of the concept of a Service Design Hub?
8. Have you any suggestions?

They revealed that valuable time was spent signing forms, searching for student information, scanning and saving documents such as sick certificates from students, storing student data in stand-alone databases, spreadsheets and diaries, sharing documents with colleagues, mostly by email or internal post and solving mysteries; as one person described it "I feel like a Crime Scene Investigator sometimes". They asserted that "paper comes at us from above, below and sideways". They were spending a lot of time and energy on administrative tasks, with little time for innovation or improvement. Another interviewee revealed that the "volume of email

is disabling, you could spend all day everyday answering emails". It was clear that these were all symptoms of inefficient processes.

Figure 63: Two offices of department managers in CIT with paper forms waiting to be processed

10.3 Taking Action

While Lean concepts were considered relevant, it was evident from the earlier cycles that the principles of Design Thinking were more suitable for CIT's requirements. The goal was to focus on changing mind-sets and outlining the important role that staff play in designing and delivering better services. As Design Thinking becomes embedded, the mind-set should change naturally, as people learn to become Design Thinkers. The concepts and tools need to be simple to learn and to use, so that people can see the value of them quickly. In essence Design Thinking will become embedded by leading people towards the integration of design into their daily work practices.

A one-page proposal for a "hub" was initially created by the author in March 2016 but needed further development. It outlined the following objectives:

- Provide expertise in Service Design and facilitate key projects
- Engage with staff and students to solve day-to-day problems
- Clarify, improve and redesign existing services and introduce new services
- Improve communication across existing processes
- Generate costs savings and efficiencies

It was proposed that the hub would be governed by a cross-section of academic, technical and administrative staff, to ensure that all projects would align with the Institutional strategy. Pre-project checks would be put in place to guarantee that a process owner existed, and importantly, that space, time and resources existed for all projects. The concept of an innovation hub was presented to 62 senior staff at a monthly senior staff breakfast in April 2016. It was important to plant the seed of innovation in their heads and invite feedback and collaboration on the subject.

A number of naming ideas for the hub or unit were brainstormed with colleagues and it was questioned whether the word "design" should be in the name. In parallel, some planning was done with colleagues in one of CIT's academic departments, to address the possibility of creating a new Service Design module and a certificate in Design Thinking that could be offered to internal and external stakeholders.

At the same time, a working group called Acting-as-One was in operation, focused on planning the activities of the proposed merger between CIT and IT Tralee to become Munster Technological University (MTU). It was proposed to use the HR Recruitment

Approval process, as an example, for an introductory workshop on Service Design, for the Acting-as-One Working Group. In May 2016, 13 staff including senior management attended a three hour workshop to redesign the existing process (Figure 16, Chapter Three).

The primary output of the workshop was a quick introduction of the *Service Blueprint* tool, mapping of the existing *as-is* process in both institutes, and design of a new merged *to-be* process (Figure 64). A number of *fail* and *wait* points were identified in the existing processes, and what was clear was that paper forms resulted in inconsistent submissions to HR, including missing data and documents. An online solution with a redesigned process would provide HR with more control over requisition submissions. The workshop was used to demonstrate how a design facility would be an important factor for merger activities.
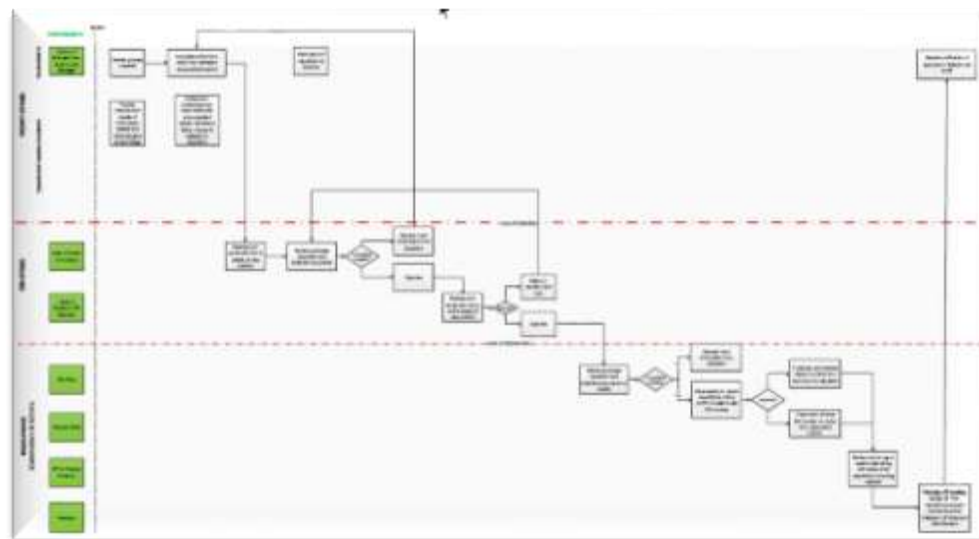

Figure 64: final to-be *Service Blueprint* (a larger version is shown in Figure 88 in Appendix B)

In early 2016 Cork County Council approached CIT's Vice President for External Affairs with a partnership proposal for a Centre for Service Innovation in Cork that would build user-centred services for the public. Some further meetings took place in November 2016 and as this thesis was being finalised, a number of planning meetings were taking place around the branding, mission and vision of the centre and the partnership between CIT and Cork County Council.

10.4 Evaluating the Action

Students encounter many *touchpoints* during their time in CIT; events such as application, registration and exams, engagement and interaction with front-line and academic staff, paper forms, silos of service delivery and system interfaces. What students do not see are the disconnected and broken processes, frustrated staff, dirty data, paper mountains and the division between academic processes, IT solutions and administrative functions.

After speaking with many stakeholders and presenting the ideas for the hub to a large audience, the structure and outputs of the hub needed to be considered in more detail. Would the hub be a "workshop factory" delivering internal capability, a training facility that supports entire projects or a hub with a transformation intent, shifting the organisational culture to one focused on customers? The value proposition needed to be considered, for example, what exactly was the hub offering and more importantly what the hub was not offering? It was clear that accelerated problem-solving was the main goal, but would the hub have the capacity to both train staff and work on new projects. When looking at best practice, the primary focus of the Lab at OPM had three core competencies:

- Lead innovation throughout the organisation by providing advice and support
- Train, coach and mentor participants though the design process
- Teach human-centred design tools and techniques.

A two-year plan was drafted, in consultation with senior management, with the following objectives for the hub:

- Train, support and mentor staff, students and external stakeholders in user-centred design methodologies, tools and techniques
- Interact with the Design Thinking community in the region and build a local network
- Share knowledge and resources by delivering seminars and events, for both the public and private sector in the region
- Collaborate with partners across projects to solve complex problems using the design process.

The three pillars of delivery were visualised as:

- **Training:** delivering events, seminars and formal training by way of a five credit Service Design module and a special purpose award in Design Thinking
- **Doing:** delivering internal improvements in a number of areas and co-designing on external projects
- **Supporting and mentoring** individuals and departments in Design Thinking across a range of sectors and projects.

10.5 Reflection

Although management had bought into the idea of a design hub, it was unclear where the hub should sit within the organisational structure. One view was that the hub should act as a support to the upcoming organisational change; the merger of two institutes, CIT and IT Tralee, to become Munster Technological University (MTU). This would also be a means of embedding a new way of thinking within teams, as part of re-engineering and merging existing processes.

Although the concept of the hub was being discussed for almost a year, it was the vision of Cork County Council that really created space for CIT's hub to move forward. The author's vision alone was not strong enough to convince management, but when a senior manager in a similar sized public sector organisation was driving forward with a Service Design initiative, it was clear to management that CIT needed to partner on this programme of innovation. At the time of writing this thesis, conversations and workshops with CIT, Cork County Council and Snook[55] were progressing and planning for a June 2017 launch event was in progress.

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[55] Snook are a Glasgow based design agency based employed by Cork County Council to help them design better services.

Chapter Eleven | Discussion

11.1 Introduction

This chapter builds on the findings from all seven action research cycles and examines the issues raised, identifying similarities and differences and comparing them against the gaps identified in the literature review. This research was designed to investigate how Design Thinking can be embedded in a higher education institution, as an alternative and novel approach, to challenge the notion of "how we do things around here". The findings suggest that Service Design tools and techniques are a strong driver towards implementing change and towards convincing senior management that a new approach is required. The author found that Service Design had a positive influence on this organisation but that influence was slow to gain traction due to barriers in place even after four years. However, this is actually a short timeframe given the intention is to change entrenched institutional culture and process.

Four primary themes emerged from all seven action research cycles. This chapter discusses how the themes emerged, what those themes are and the implications of Service Design practice on those themes. Discussing the findings was a two-step activity, firstly extrapolating the key findings from all seven cycles and secondly testing those findings with some experts in the field. In March 2017, as the author was navigating through the findings, a fact-finding trip to London was planned with colleagues from Cork County Council. The purpose of this trip was to meet a number of Service Design experts in order to learn from their experience in setting up public sector innovation labs. Additionally, it was an opportunity to discuss and test the four emerging themes and findings from the thesis. The key discussion points from these meetings are summarised in Table 13.

Person	Role and Organisation	Key Discussion Points
Sarah Gillinson	Managing Partner, The Innovation Unit	• Build capability and mobilise stakeholders. A mix of skills in a team is critical, communications and engagement expertise, design expertise and leadership • Start small, think big • Demonstrate value fast • Mind-set change; it is important to get people to want the change • A leader at the top who is ready and able to lead the design journey is ideal • Get people to identify what they want to do and why they want to do it
Dominic Campbell	Managing Director, FutureGov	• No point redesigning a service, or a website, if the structure behind it is still wrong • Design change from outside-in and inside-out simultaneously • It is important to demonstrate the benefits, for example, savings in the mail room, reduction in contact centre calls etc; • Five skills or roles are needed to start a "lab" or a "hub"; Service Designer, User Researcher, Technologist, Project Manager, Communications Specialist
Will Bibby	Transformation and innovation Lead, Essex County Council	• Deliver a Design Thinking training programme for senior managers • Reform and change needs to be pushed from the top down • Try to set up a lab or team focused on transformation • Build capacity by partnering with other organisations • Pick projects where collaboration is required across departments • Design the evaluation and measurement up front before a project begins
Mark Hurrell	Designer, Government Digital Service	• Every service should go through an existing evaluation to see if it works • Recreate services in different places • Look for design patterns in order to stop solving the same problems over and again • It is important to embed designers across public sector organisations

Table 13: Details of meetings with Service Design experts in London in March 2017

Although there is much cross-over between each theme and how they influence each other, it was practical to summarise, interpret and group the findings in this way. For instance, innovation within an organisation is influenced by both leadership and culture and the two are almost intertwined, as leaders create the culture in an organisation.

As part of the final project report, further and more recent literature was reviewed as follows:

Bason, C. (2017)	Leading Public Design: Discovering Human-Centered Governance. Bristol: Policy Press (UK).
Dorst, K. (2015)	Frame Innovation. Create New Thinking by Design. Cambridge: The MIT Press.
Nesta (2016)	Designing for Public Services. London: Nesta. Retrieved 1 March 2018 from https://www.nesta.org.uk/sites/default/files/nesta_ideo_guide_jan2017.pdf
Service Design Network (2016)	Service Design Impact Report: Public Sector. Available at: https://www.service-design-network.org/books-and-reports/impact-report-public-sector (Accessed: 1 March 2018).
Yu, E. and Sangiorgi, D. (2018)	Exploring the transformative impacts of service design: The role of designer–client relationships in the service development process, Design Studies. (Design Processes in Service Innovation), 55, pp. 79–111.

Table 14: Additional Literature

11.2 Facing fears

In line with many studies (Fox and Brewer, 2010; Mulgan, 2007) and as demonstrated throughout the cycles, many people were reluctant to embrace change. It could reasonably be argued that perhaps they felt that change might impact upon their existing work environment. Although as evidenced during cycle seven by one staff member, many people are open to change but "when you are working on something for a long time, you do not always see how it could be improved". People develop a tunnel vision, and a certain short-sightedness can become contagious. As Basadur (2004) recognised, encouraging people to apply creative thinking to challenges, enables them to face their fears by thinking collectively, while at the same time, empowering them with new methods. As such, undertaking this research as an insider

embedded in the action within this organisation raised a number of challenges. One way to overcome these fears is by learning, doing and practicing and this was true for both the author as part of her own professional development and for many project participants throughout this research investigation, based on their feedback. The research supports the view that Design Thinking can help to alleviate these fears with practical powerful methods that support people to become good problem solvers. Trust took a long time to build and even after the success of the pilot project, RECAP, it was clear that change takes time and needs to be cultivated over a number of years (Campbell, 2014; Martin, 2009).

11.3 Theme 1: Shifting mind-set

When embarking on this journey the author was already established in a role delivering change and assumed that introducing a new approach like Service Design would be similar to previous IT led change projects. The author did not understand the full fossilisation of the existing culture within the organisation and the task of changing habits that have been embedded over some time.

Introducing new tools and techniques and achieving some relevant outcomes and quick-wins has the potential to make a real difference, if you can start to change the mind-set of the people working in the organisation (Clay, 2013; Kimbell, 2011). The findings mirror this view, staff in CIT have to "get-it", and they should understand the reason for change and be willing to adapt their existing work practices, to be part of this mind-set change. This theme is consistent across all cycles; the "people" element and the different types of people in an organisation that can promote or hinder innovation.

Many authors discuss the importance of quick-wins as small steps towards organisation-wide change, but there is a gap in the literature as to how to use these quick-wins to reshape the culture of the organisation (Clay, 2013; Hammer and Champy, 2003; Kanter, 2013a; Kotter, 1995). This research was investigating if those quick-wins could lead to transformational change. At the start of this research journey, the author did not think about how those quick-wins could change cultural mind-set, but a good deal of the research has battled with this. Throughout this research, the author strived to implement quick-wins, in order to get people on board

with a design approach. What has been observed is that those quick-wins have snowballed and some staff are now trying to change their thinking, even where the author is not part of that process. This seems to further support those that argue that quick-wins can lead to significant change (Kanter, 2013; Kotter, 1995) and to contradict the research that suggests there is no point in implementing quick-wins (Hammer and Champy, 2003; Jenkins, 2008).

Service Design is a human-centred design process which makes it essential to include the people that you are designing for in the design process (Holmlid, 2009; Moritz, 2005). What the literature does not explain is how to win over front-line staff delivering services, and convince them of the importance of co-designing prototypes and solutions, when their priority is the completion of day-to-day operational tasks. Prior to starting out on this research journey, the author did not realise the impact of poorly designed services. The manual nature of many services leads to bottlenecks, frustration and miscommunication. Staff are busy doing a lot of things but achieving very little, because of inadequate back-stage processes that do not support front-line services. In fact what was found in many cycles is that no formal process existed but a series of tasks conceived by default rather than by design. As one staff member described it during the RIO project: "everyone is always fighting their own corner" rather than working together.

What did become clear after cycle four, Magnifeye, was a change in attitude; a try-it-and-see mentality and an openness to prototyping was evident, for example, the introduction of pop-up help desks to proactively deal with queues. The evidence is therefore that a Design Thinking mentality was starting to become embedded especially as some of these new offshoot projects were not instigated by the author. Many staff in CIT have a sense of pride in what they do and have an appetite for change, but struggle with barriers such as under-resourcing, constrained budgets and lack of managerial support.

11.4 Theme 2: Leadership with a cohesive purpose

Another factor that can influence mind-set is a leader who is ready and able to lead change and can encourage people to take risks and explore opportunities (Boyle et al., 2010; Droll, 2013). What was not clear from the literature, is where in the organisation

that leader needs to be situated, and whether change can only be driven top-down. Many authors (Kotter, 1995; Kanter, 1984) discuss the necessity of a leader with a vision to drive change but how to do this using a Design Thinking approach in a higher education institution was not deliberated. Interestingly, where the change is instigated from in the organisation impacts the effect the change has and this study found that grassroots change takes longer to stick. Although many author's (Kotter, 1995; Kanter, 1984; Burke, 2013) see that change needs to be driven from the top, this author's role as a Design Thinking leader situated at the middle of the organisation, did have the power to influence change. If the change had been led in parallel by senior management then the impact might have been far greater. The most obvious finding to emerge was that there did not seem to be a consistent view on underlying priorities, and a stable foundation to work from.

Although participants on the ground could see the value in Service Design, the initiative and associated projects were not being led by managers or sponsors in key areas. Recommendations from Design Thinking experts who had first-hand experience was that senior management buy-in and direction were a priority, when trying to convince the rest of the organisation. The independent social enterprise, The Innovation Unit, gave two examples; one organisation where a single senior manager was leading the change, resulted in limited impact and the initiative failing to take off. Another similar organisation that had commitment from five senior directors, was driving change through the use of Design Thinking and "making stuff happen".

As discussed by Miller and Moultrie (2013), a design leader is one who can lead and embed a Design Thinking approach in an organisation. This leader seems to possess different qualities to those on the senior management team, although they could be the same person but it is not necessary. The most interesting finding with regard to leadership is the impact the author was able to instil from the middle of the organisation. It is likely that she would have had far less impact if she was on the senior management team caught up in daily management duties and not free to "do", influence and implement iterative change. What the author found, is that it can be a lonely journey starting out as a sole change agent, emerging into a design thinker and later on transforming into a design leader. Convincing colleagues and the organisation as a whole, while at the same time reminding and motivating oneself, can be a

difficult task. The evidence so far from this research is that design leadership at the top can only exist, if it is being driven in parallel from the bottom and middle of the organisation. One has to start somewhere and the evidence so far shows that implementing quick-wins and involving senior management in workshops, can influence their commitment to Design Thinking, demonstrated in the establishment of a Service Design Hub.

After the RIO project, a number of "checks" were put in place which led to a lull in terms of new projects, because the business readiness was clearly lacking. The author almost designed herself out of projects because the critical factors were not in place for improvement and change to take place. Moments of inspiration arrive and continuous communication eventually starts to traverse through the organisation as was evident when an "Introduction to Design Thinking" workshop organised by the author in March 2017 sold out 30 places in a short space of time.

Much of the literature discussed the power of design champions within the organisation as a necessary vehicle for transformation (Battarbee et al., 2014; Liedtka, 2011). The author found this to be true, and throughout the seven cycles recruited champions and supporters along the way. It is interesting to note from these results, and not clear from the literature, that finding a partner organisation that is looking to build user-centred services, can have a significant impact on one's own organisation. When Cork County Council proposed a partnership, in the form of establishing a Service Design Hub with CIT, the appetite for change grew and more senior managers came on board in support. This finding was unexpected and suggests that a sense of urgency from elsewhere can start to build an army of like-minded thinkers, with a similar purpose and vision.

As a business analyst, the author was always of the mind-set that digitisation can solve many existing problems, in conjunction with re-engineering existing processes. What this journey has highlighted to the author and her colleagues and confirmed in some real-world examples (Snook and Design Managers Australia, 2014), is that digital is not a panacea for resolving problems. In essence, the cultural changes will have to shift, before technology is really allowed to do its job, otherwise technology will continue to be blamed for process issues. All seven cycles of action research revealed something surprising; a shared understanding of purpose and vision for

student and staff experience across the whole Institute, appeared to be missing. Changing work practices has happened to some extent, with some departments now understanding that successful digitisation of a process involves designing the future state. They also realise that they need to co-design their own services, with all stakeholders involved, rather than dropping off the process to be "fixed"; like dropping one's car at a garage for a service. Change was not being business-led even with involvement in projects and Design Thinking training. This reinforced the need to co-design user-centred services, with ongoing support and guidance, to help people to take risks, prototype ideas and implement their own change.

11.5 Theme 3: Silos of cyclical inaction

Throughout the research while attending conferences[56] and speaking to colleagues in other institutions, it seems that bureaucracy and paper work have a constrained straightjacketing effect on processes and mind-sets in higher education administration and these organisations are not innovative by nature. As mentioned in the literature, the impact of organisational silos on innovation and change initiatives, is a common issue (Beckman and Barry, 2007; Mulgan, 2007; Trkman, 2010; Von Stamm, 2008). Very little was found in the literature about how Service Design tools and techniques could influence silos in an organisation, but there is a concept of service owners in contrast to department managers, as a way to eradicate these silos. This was introduced to the author by Dominic Campbell from FutureGov (Table 13), who advised on firstly building a digital service, then restructuring around the service and creating a service manager or owner to own the entire customer journey. Building and delivering the right services will eventually lead to cost savings and elimination of silos.

After delivering the structure of the Student Lifecycle, it was hoped that the next step would be to align CIT's systems, processes, services and supports under this lifecycle. The problem that exists in many higher education institutions and highlighted through several discussions[57], is that there are managers and staff assigned to the

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[56] See Appendix C for a full list of conferences and seminars attended.
[57] See Appendix C for a full list of conferences and seminars attended and Table 13 for key discussions with Service Design experts in March 2017.

operational day-to-day duties, but there is no role assigned to iteratively implementing change, after each cycle of administration. It can be very difficult to redesign services in an organisation where the structure and hierarchies remain the same. The customer or student journey needs an owner from start to finish, for example, since RECAP, part-time student registration still has no owner and although the experience improved for part-time students, continuous iterative improvement would be possible, if there was a service owner.

The findings demonstrate that people in general are open to new approaches but those approaches have to make their jobs easier and be simple to grasp. The problem is that there is no incentive to change or do things better and this was evident during cycle three, RIO, when staff showed frustration with the existing inefficient processes. They were too burdened with daily tasks to drive change in their own areas, let alone merge those changes across a number of departments. Once you earn their trust and they understand what Design Thinking is, in the author's experience, it is then easier to encourage people to work with you. There are plenty of good ideas being implemented in different areas; the difficulty is for someone to coordinate all these ideas across a myriad of departments and services. People get frustrated when trying to bring groups together, which sometimes means they just plough ahead and do their own thing resulting in high and low spots of good student experience. It was also evident that there is a lack of trust: "I do not trust any of them anyway; I always double and treble check everything." This can be seen as a barrier to co-design and there is an element of starting on the back foot.

As was mostly evident after the RIO project, one of the challenges to emerge was that cross-silo service delivery can be really difficult. On a similar strand, front-stage service delivery is usually planned, managed and delivered separately to the back-stage processes, which can lead to a lack of understanding on both sides. The back-stage developers do not really understand the type of queries that front-line staff are dealing with and the front-line staff do not understand the intricacies of back-stage processes and systems. This became very evident during the Magnifeye project where a small front-line data entry error can impact all the follow-on downstream processes.

Change has in this context been reactionary and not co-created across departments. Many authors have discussed silos as barriers to change and innovation but did not

suggest ways to remove or work around these barriers (Battarbee et al., 2014; Beyerle et al., 2011; Matthews et al., 2012). Evidence from the RIO project is that even when it is recognised that there is a cross-silo collaboration and service delivery issue, the difficulty then exists to get people to work together. Although people mainly have good intentions of working together with the same purpose in mind, one service owner is the most practical way to create a better student experience. What happened during RIO was that there was no senior leadership direction which led to indirect communication, confusion and frustration.

11.6 Theme 4: Creating space

There is a problem that cannot be ignored, where organisational change is process-led rather than user-led which creates a vicious circle; "a complex chain of events which reinforce themselves through a feedback loop" (n.d., 2017). These problems seem to be common in hierarchical and bureaucratic organisations where there is no space or time to take the initiative, identify problems and develop better processes to fix those problems. This was evident across a number of cycles, when the author observed that front-line activities were closely supervised, and a rigidity exists as to what tasks are performed by front-line workers; their roles are almost set in stone.

The aim was to seek out, develop and nurture a range of champions across the organisation, but the reality was that people were too busy with their day-to-day jobs and not encouraged to take risks and innovate. Their role is to keep the lights on, and this is the case in many public sector organisations; it is a vicious circle, staff are too busy to innovate, and the same processes continue to overload the same staff, at busy times of the year. What the Government Digital Service (Table 13) found, was that organisations like CIT, end up solving the same problems over and again.

Prior studies have noted the importance of creating both a physical and psychological environment for innovation and change (Droll, 2013; McPhee, 2009; Mulgan, 2007) as well as assigning resources to change projects. A common theme that emerged during this research was that employees are expected to continue with their day jobs and are not allowed space to work on iterative improvement, which was a consistent barrier to effecting change.

What is interesting about the data and the outcomes from cycle three, RIO and cycle four, Magnifeye, is that when staff were introduced to the concept of a War Room using De Bono's PMI tool, they used this concept to replace traditional laborious and unproductive feedback meetings. Although they did not always have the space to instigate improvement projects, they could see the direct application of some tools into their existing environment. Another example of staff creating their own space, was the implementation of *Service Prototypes* such as pop-up help desks, to proactively deal with issues, rather than being reactive and waiting for queues to form at busy periods. The most striking aspect of these examples is that rather than waiting for management to create space, it was unusual to see a pre-emptive prototyping approach led by individual staff members and it would have been unlikely to happen before they were introduced to the concept of Service Design.

Redesigning services is important but in order to make things more efficient, there has to be a mechanism in place, to follow up this redesign with digitisation and IT development as Martin (2009) advises "design must be matched to what is technologically feasible". Although it is definitely true that not all service experiences are improved through IT development, it does help to have this in place when required. Having a platform in place to develop online self-service for students and staff across a range of services should be a priority in the higher education sector. Unfortunately, capital budgets and competitive private sector salaries restrict these types of organisations from progressing forward.

11.7 What was learned about using Service Design for change projects in a higher education institution?

The findings suggest that Service Design is a strong driving factor in motivating people towards change. Although the participants that attended the Service Design Master Class were enthused to take the learning back to their own organisations, many of the same issues from the four themes emerged for them.

The most obvious finding to emerge from the analysis of all the cycles is that leadership and culture are a major perceived influence on change. Putting that to one side, it is interesting to note that in all seven cycles of this study, Service Design tools were disseminated to a wide range of internal and external stakeholders including

students, senior management and front-line staff. The participants across all cycles demonstrated a clear understanding of the tools and techniques of Service Design and at times the author was surprised at those who later became advocates for these new approaches. There is something about these tools that permit people to be innovative in ways that perhaps they are not encouraged to do in their normal jobs; the tools unleash creativity and enthusiasm. One example was during the RECAP cycle when one staff member who was not overly eager at the beginning of the project, then really embraced the creation of *Personas*[58] and her enthusiasm was infectious across the whole project team. Another example was a few weeks after the Service Design Master Class, a manager who had attended the event but seemed disengaged, asked for advice on using Service Design for a number of workshops, to redesign some of their key student-facing services.

Clearly, times are changing, and students and staff expect online and self-service across all services. CIT need to better understand the services they are delivering and the entirety of those services. Service Design tools and techniques can help to achieve this, although there was a tendency for some colleagues to question whether designing better services takes too long. This was particularly evident during cycle seven, when Service Design was introduced to a number of stakeholders who had started to look at the merger of CIT and IT Tralee. One manager commented that "Design Thinking could tie us up in knots with the whole merger project" when it was clear to the author that Design Thinking could actually help to release some of the knots, that they were already tied up in.

This type of approach is very reliant on having people that can do it and that buy into the process but it is also hostage to the external environment which in this case is a high priority merger project. Although the author understands that senior staff are more concerned at this point in time with the big picture rather than the details, from a Service Design point of view, this could lead to problems further down the line, in terms of the experience of the new merged services. In order to overcome these types of barriers, the author continues to offer taster sessions as a way to put Service Design on the agenda. In spite of these cultural barriers and a preference for instant results, there has since been some conversations about actually using the redesigned HR

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[58] *Personas* are a tool used to create a fictional character that represents a typical user or customer.

Recruitment Approval process (cycle seven), despite the reticent feeling towards the Design Thinking process. Although this resistance to change and trying new approaches has been a common barrier throughout all seven cycles, the author is willing to put up with the fact that a bigger shift in mind-set will take longer.

Many authors acknowledge the difficulty in selling Service Design to the organisation and explaining it to non-designers (Brown, 2009; Kimbell, 2011; Marino, 2011; Martin, 2007). It can be thus suggested that Service Design tools and techniques do work, but only in parallel to getting people to understand the process that they will need to go through. Once they can self-identify problems and demonstrate a sense of what it will take to deliver that change, then they are empowered and independent and the Service Design "stabilisers" can be removed.

Learning and recommendations for other higher education institutions embarking on Service Design projects to achieve change are outlined in the following table. This is based on the knowledge gained across all seven cycles.

Cycle	Aim	Unresolved Issues	Impact	Learning
RECAP	To improve the Induction stage of the Student Lifecycle for new part-time students.	Cross-silo communication and co-creation of services and experiences.	Improved existing services, introduced Design Thinking and got people to acknowledge the need for change.	Ensure there is a business leader, process or service owner engaged and hands-on to lead the change initiative.
Student Lifecycle	To identify the stages of the CIT Student Lifecycle which could be used as a tool to help CIT organise and deliver student-centred services.	The lifecycle was never communicated to the wider CIT audience due to a lack of ownership.	Service Design tools and techniques could assist in a programme of work to support the student journey.	Do not underestimate the power of the existing culture. Get a handle on other change projects and speak to those involved to get a sense of the challenge ahead.
RIO	To increase the number of students receiving a streamlined registration, induction, and orientation experience at CIT.	How to engage staff in co-design projects to identify issues and opportunities and deliver seamless and consistent services.	Realising the necessity of a project manager or co-ordinator for Registration, Induction and Orientation.	Find ways other than email to communicate with staff and students. Get away from the desk and go out and about, have conversations and make observations. Some of the

				more interesting ideas will be gleaned this way.
Magnifeye	To map the back-stage processes of the induction phase of the Student Lifecycle, identify the right problems and develop some solutions.	The IT Services team did not always have input to processes outside their department, but which affected them downstream.	30 staff attended 11 workshops and 43 processes were documented and mapped in a clear and concise manner which ultimately led to quicker response times when troubleshooting issues.	Encourage risk-taking, prototyping and above all, a sense of fun; these will all help to create momentum and interest. Work with the willing.
Service Design Master Class	To provide formal Service Design training to CIT staff as a step towards embedding this new way of thinking and doing across the organisation.	Staff needed to be allowed time to prototype; take risks, try out ideas and make mistakes.	The event created a buzz in CIT and an interest among staff that could now see Service Design and its practical application to everyday problems.	Let go of the oars! Allow spin-out initiatives and encourage people to try facilitating and using the tools themselves. Service Design does not always need to be organised by a design leader.

Exam Paper Submission	To engage more stakeholders and project managers to adopt Service Design as a tool to transform a broad range of services and to transform CIT's existing exam paper submission process.	Demands of operational activity, daily tasks, a lack of project experience and no shared understanding of the purpose and vision caused the project not to progress.	What was interesting was that most of the issues uncovered were not of an IT nature and were more process and service based.	Ensure staff assigned to work on projects are freed up from some of their day-to-day duties, or at the very least, implement the project during a quiet period.
Service Design Hub	To build internal capability for designing user-centred services across CIT.	Senior sponsorship, governance and clarity about where the hub should sit within the organisational structure.	Developing a partnership with Cork County Council to build the hub together to "train, do and support" Service Design in the public and higher education sectors.	Communicate, network and get external advice; it saves time and energy when you can learn from others.

Table 15: Learning and recommendations

11.8 Research Gaps

Building a "designerly mindset" inside the organisation in order to infuse a human-centred approach to delivering services, is one encouraged by some authors (De Lille et al., 2012; Sangiorgi, 2011), but how to do this within the higher education context is missing.

What this research addressed was the practice of using Design Thinking in a higher education institution, across seven cycles of action. The author was able to make a substantial contribution and impact, from her position in the middle of the organisation using a new formula; Service Design tools and techniques to transform a number of processes and services.

What the author found was that implementing quick-wins and across a range of projects did influence senior management on two levels; their commitment to establishing a Service Design Hub and a step closer towards using these new tools as instruments of change, on a large merger project.

Partnering with a local council to build and deliver user-centred services, is the final step on this journey, and probably the most significant contribution to practice, as this type of alliance has not been done in Ireland before.

While Design Thinking does enable an organisation to start thinking outside the box, taking risks and trying out new ideas, it does not get to the root of solving the issue of silo-based service delivery. What this research found, was that this can be the most difficult task, and creating service owners is a step towards transformation.

11.9 Chapter Summary

This research set out to disseminate Design Thinking approaches and Service Design tools and techniques across the organisation with a view to embedding a new approach to problem-solving and a step towards long-term change. The research extended design to people who may not have normally been exposed to it and took the mystery out of redesigning services. Two hundred and forty two people were directly exposed to Service Design tools and techniques throughout this research and hundreds more were indirectly affected, either through better service experience or through participating indirectly through surveys or the Student Lifecycle stand. The end result was people co-designing with colleagues for the first time ever, sharing

knowledge and experience and working through ideas in a collaborative way. This is one step on the journey towards long term sustainable change, for this higher education institution.

Chapter Twelve | Conclusions and Recommendations

12.1 Introduction

The literature review identified that there is little academic discourse on the subject of Design Thinking, in relation to its potential to transform higher education services. The review mapped out what is known about the use of Design Thinking in the public sector and effectively highlighted what remains unknown about Design Thinking as a tool to deliver student-centric services in the higher education sector. This research not only provided insights into problems and issues in the higher education sector but also how to overcome everyday barriers posed by people and culture. By failing to address these issues, institutions risk haemorrhaging money and resources on inefficient administrative operations that could otherwise be devoted to mission critical activities.

At the beginning of the thesis, poor student and staff experience was demonstrated with a photograph of a door sign that read "cannot see any students today......massive backlog". The research has shown that in order to address poor service delivery, we need to change the approach, mind-set and structures of higher education services.

12.2 Addressing the Research Questions

The following research question was approached in a number of different ways using an action research approach:

> *To assess how Design Thinking can be used as an approach to analyse and improve services at each stage of the Student Lifecycle and embed this approach as a long-term sustainable change enabler in the higher education service system.*

In relation to the primary research question the findings of this research built on the work of many authors. With regard to all seven cycles, the study has shown that Design Thinking can have a positive influence and create some worthwhile outcomes. The most obvious finding to emerge from this study is that although Design Thinking can be used as a new approach to solve existing problems in higher education institutions, it needs to be undertaken with support at all levels of the organisation to ensure sustainability. Important questions were raised during the study about the

importance of top-down leadership and organisational culture, but what is clear is that leadership can come from any level of the organisation, if the approach is the right fit.

The first sub-question was how can Design Thinking influence existing culture in higher education? The author gained influence for an idea which was to introduce Design Thinking to the organisation as a means of changing "how we do things around here". As discussed in the previous chapter, it takes a long-time to shift existing mind-sets but by starting on that journey, it can now be demonstrated that Design Thinking influenced the existing culture in the following ways:

- By creating a permissive environment for people to come together and look at problems afresh, which has never happened before.
- By creating a way of revealing where processes had evolved into inefficient experiences for those involved, and provided opportunities for new services to be designed.
- By demonstrating how change could be implemented, through small distinct change projects and therefore encouraged further change and more ambitious change projects.

The second sub-question was how can leadership support, or hinder, the design process as a new way of working? There is evidence from all seven cycles that the role of leadership in the change process does have a meaningful impact on the success of the change endeavour. The following are the main leadership drivers and barriers for effective change, as identified across all cycles:

Drivers:

- Lead with a design-led mind-set focused on driving internal change.
- Engage staff at all levels and create space for innovation and change.
- Communicate a consistent message and demonstrate a commitment to transform services for students.

Barriers:

- Short-term thinking with no incentive for staff to improve services.
- Lack of engagement, commitment and support for a new way of working.
- Isolation of various processes and tasks within different departments.

The third sub-question, in what ways can Service Design tools and techniques help an organisation be collaborative and innovative? Service Design demonstrates to all stakeholders, the importance of collaboration, when designing and delivering services. The findings show that Service Design allows a group of people to spend time focusing on the problem before realising opportunities and delivering solutions. This was demonstrated across all cycles and in particular RECAP, RIO, Magnifeye and Exam Paper Submission projects. In previous ways that the Institute has tried to address problems, there did not seem to be enough time spent on finding out exactly what the problem was, and the Service Design approach spends more time in the "discover" and "define" phase, which enables the creation of more effective solutions.

12.3 Research Aims and Objectives

The following objectives were set at the beginning of the research and revised as the author iterated through each cycle.

Objective 1: To undertake a critical review of relevant literature on the use of Design Thinking to influence iterative organisational change within higher education and the public sector.

Conclusion: A wide range of literature was reviewed throughout this research journey, inconsistencies and gaps were identified and the existing literature was deemed to be sparse on the use of Service Design tools and techniques, to implement change in the higher education or public sectors.

Objective 2: To implement a number of small change projects using Service Design tools and techniques, and improve student and staff experience at CIT.

Conclusion: Two change projects were delivered to completion and two change initiatives reached clear problem definition with recommendations for next steps. A Student Lifecycle was created, Service Design training delivered and considerable progress was made on establishing a Service Design Hub to train, support and mentor staff, students and external stakeholders in user-centred design methodologies, tools and techniques.

Objective 3: To empower employees with Design Thinking skills.

Conclusion: Over 200 staff were directly exposed to Design Thinking through involvement in project workshops. Twenty two new tools and techniques (Figure 15, Chapter Three) were introduced across seven action research cycles. A number of staff began to disseminate these tools further, both lecturing staff delivering practical workshops to students, and administrative and technical staff applying them directly to work activities.

Objective 4: To develop a process and service improvement plan based around the Student Lifecycle.

Conclusion: Although a number of opportunities were identified as part of the Student Lifecycle development, an organisational-wide plan was not developed, because of the challenges that ensued throughout the other cycles. The Student Lifecycle, developed in cycle two, is still relevant and the next step would be to map strategic priorities to this framework.

Objective 5: To identify the conditions for change and create a link between these conditions and measures of success.

Conclusion: Four themes emerged in the discussion which highlighted conditions for change based on implementing the seven cycles of action. These included shifting mind-set, progressive leadership with a cohesive purpose, eliminating silos of cyclical inaction and creating space for innovation and change.

Objective 6: To establish a design hub to train, support and mentor staff, students and external stakeholders in user-centred design methodologies, tools and techniques.

Conclusion: Provision of a Service Design Hub will help CIT to adopt a radically different method for delivering the best services through co-design, education and building communities with a large range of stakeholders. At the time of writing this thesis, the establishment of the hub was a work in progress with a launch date set for May 29th 2017.

Table 16: Research objectives and conclusions

12.4 Contribution to Knowledge and Practice

The use of Service Design tools and techniques as an investigative approach, to discovering, defining and resolving existing problems in higher education administration, is in itself a contribution to knowledge. Investigating the practice of how things are done with a Service Design lens was a new approach in this institution and formed a novel way of identifying problems and challenges, the needs of those delivering and owning services, but primarily the requirements of those receiving services from the Institute. All of this contributed to the knowledge garnered from practice-led research in a large organisation. The problems that were investigated were real-world problems that likely occur in every higher education institution across the world and researching those real-world problems will lead to tangible change. The contribution was not just limited to knowledge but the implementation of change through a number of action research cycles. Action research empowered the author to better her own practice and impact the learning and development of the whole organisation.

Surprisingly this was the first time that Service Design had been introduced to a higher education institution in Ireland. Higher education institutions possess organisational characteristics that are not quite reminiscent of other public sector bodies or private sector organisations, but perhaps somewhere in between. They are primarily focused on teaching and research with a unique system of administration and policy and little emphasis on managerial tools and practices.

In order to implement Service Design tools across a range of projects in a higher education context, a series of recommendations are outlined in Table 17.

Recommendations
• Create space for Service Design tools and techniques to flourish and show their true value in understanding the problem space.
• Expose staff at all levels to a new methodology and problem-solving approach.
• Provide an open-minded environment for people to come together and design new experiences and services.

- Start with small change projects to demonstrate the effectiveness and possibilities of Service Design as a vehicle for change.
- Engage and educate managers at all levels towards a design-led organisation.
- Cultivate design leaders inside the organisation to work as innovation catalysts, directing and nurturing a new approach.
- Align a design approach with the institutional goals through a dedicated team or unit, focused on transforming the whole student experience.

Table 17: Recommendations for effective change

In terms of the contribution this research has made to the author's own practice, there are two elements to consider:

- An exposure to Design Thinking has completely changed her own approach to her work and her interest in change management. It has expanded her career and research opportunities and opened up conversations that may never have happened. The author took on the role of change facilitator and led a Design Thinking revolution in CIT which could ultimately start a new transformation for the higher education sector using a Design Thinking methodology.
- The author has built and developed her own method library, which has come from crafting her role as a designer and growing her expertise through action. Based on the author's previous experience across a range of projects where too little time was spent on problem definition, she now uses the Double-Diamond (Design Council, 2010) approach and the "discover" and "define" phases at the start of every new project. This is not only a change to the author's own practice, but has increased the likelihood of an appropriate solution.

Service Design has helped to uncover where tasks and activities have just evolved into processes rather than being designed that way. This is evident from the lack of documented policies, processes and procedures, and the fact that in many cases a process depends on an individual's tacit knowledge, in order to function. The evidence from this research indicates that where it is possible to uncover those evolutionary processes, is where opportunities can be found to improve the experience.

This research makes two final noteworthy contributions. Implementing programmes of quick-wins is a viable route in order to move towards larger cultural change in this organisation, and therefore likely in other organisations of a similar nature. Secondly, the author's role as a Design Thinking leader situated at the middle of the organisation, influencing those from the top down, while achieving successful outcomes is a unique contribution to this area of research.

12.5 Limitations and Future Research

- This research focused on the student and staff experience in relation to the administrative processes, in a single higher education institution, and not on students' social or academic experience. The areas that were targeted for a service transformation included IT, Admissions, Fees and Exams where central processes affect staff and students in all academic departments, schools and faculties.

- The aim of the research was to embed Design Thinking as a new way of working and the common barrier that resurfaced, was how people can impact the success or failure of any change project. This research skimmed the surface of change management and organisational culture and did not delve deeply into what makes people tick in a higher education institution and why these institutions are the way they are; slow to change, risk-averse, hierarchical, rigid and bureaucratic silos.

- The seven action research cycles are projects or initiatives that came to the attention of the IT Services department and were deemed to be good examples for service redesign. A more strategic top-down approach to choosing the projects may have yielded different results.

With a view to building on existing theory, there are a number of areas for further research and investigation:

1. Comparative research in another higher education institution, but one where the change is being driven by a senior management team. This would allow one to test the speed at which change and new approaches would be adopted. It would be interesting to see the investigation done, looking at the same type of problems, but with different leadership and vison.

2. Comparative research in a similar organisation, looking at the same problems in different ways, perhaps replacing action research with another methodology and performed by an outsider looking in, with a different lens.

3. This research could be done in any organisation using the same approach, tools and techniques but maybe a different type of organisation, such as a local authority or county council, and one with a different culture and set of values.

4. Utilising the power and capacity of students in co-designing services can be difficult to co-ordinate. For this to work properly, a student initiative could be trialled, that recruits student ambassadors to take part in designing their own services, for which they would receive academic credit, similar to the University of Maryland's Innovo Scholar programme[59].

Of the four areas above, the author is most interested in pursuing the fourth topic, and establishing a formal process of co-designing services with students of the new Certificate in Designing Innovative Services, launched in September 2017, and students of a new module, Designing Tech Experiences. In addition to this the author will continue to practice and preach on all things Service Design, with many new collaborators in Cork.

12.6 Publications and Dissemination

During each action research cycle, a diverse range of literature was reviewed, and as a result, many of the critical learnings often came from conversations started online, by connecting with experts on Twitter or Linked-In. Attending seminars and conferences and writing journal papers also allowed the author to gain expertise and knowledge along the way. Presenting findings and results through peer-reviewed conferences and journal articles, made it possible to reinforce and ensure the quality of the research being undertaken.

As part of this research, the author published four peer-reviewed papers, in the area of Design Thinking and Service Design in higher education, as a way to contribute to this existing knowledge gap (full papers available in Appendix D). Although there is some

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[59] The Innovo Scholars Consulting program pairs instructors with elite undergraduate students to innovate Smith School courses and programs, at the University of Maryland.

literature around the concept of Design Thinking in the public sector, little research exists in the higher education sector, which is likely a very different operating environment. These papers will guide other researchers and practitioners in the higher education sector on the challenges and risks associated with embedding Design Thinking, as a way to assist in the transformation of an organisation from a bureaucratic, risk-averse one to a dynamic, iterative, efficient administration.

12.7 Final Remarks

The role of the author was always to act as a facilitator to foster ideas and empower those delivering services to adopt approaches to solve issues. Action research is rigorous and responsive, improves action through a process of iteration and requires a great deal of creativity. As a practice-based researcher it is necessary to constantly justify what you are doing and why you are doing it.

Design Thinking is not a magic bullet for all the issues faced by higher education institutions, however it can help to align priorities, shift the focus to delivering user-centred services, and disrupt the norm within these organisations. The hope is that this research and thesis will inspire other higher education institutions, to nurture design and creativity in an implementable way, and encourage real change.

Part Six | DOC804 | Reflective Practice

Chapter Thirteen | Reflective Epilogue

Musing, contemplating, daydreaming, wondering,
doubting, guessing, intuiting, criticising, learning: all these
states of mind and many more might be evoked when we
ask ourselves what we are doing in reflective moments
(Stedmon and Dallos, 2009).

13.1 Introduction

Reflective practice forces one to face disquiet and doubt, by asking difficult questions (Bolton, 2010) and trying to observe ourselves and our practice, through other's eyes. In the case of this professional doctorate, reflective practice has meant reflecting on what I have done as a practitioner, researcher and change agent. Back in 2012, after experiencing resistance when trying to progress a number of change projects in CIT, a new approach was sought to encourage participation and collaboration across a wide range of necessary improvements. As a facilitator of change I wanted to change the mind-set of the institution, understand and improve the situation around me, whilst simultaneously improving my own practice.

Schon (1984) introduced a three-step process; learning, reflection and change, and the concept of reflective practitioners arose from a series of books that he wrote. He coined two phrases "reflection-in-action" and "reflection-on-action" with the former referring to how we think on our feet. Reflection-in-action happened throughout all seven cycles, for example, during workshops when participants reacted to new knowledge generated and co-created new solutions. The reflection-on-action mostly happened at the end of each project, by capturing feedback and documenting lessons learnt. This process brought up a lot of feelings relating to who I am and why I do the things I do, in essence, I started to question my own expectations, values and beliefs, skills and strengths. I have learned through reflection, that not everything is within our

control and sometimes taking a step back is a more powerful approach; as a colleague advised at one stage: "let go of the oars". According to Rodgers (2002), when researching the work of Dewey, she summarised reflective practice as a "systematic, rigorous, disciplined way of thinking" that happens through interaction with others. This reflective practice chapter is divided into three sections:

- My practice
- The impact of my practice on the organisation
- The research process

13.2 My Practice

The person starting out on this journey is somewhat different to the current version of me. At the beginning I was learning about Service Design and lacked the knowledge and confidence to convince everyone around me. By traversing through a number of cycles and learning about the power of Service Design, I discovered not only how it could change me but also change the organisation where I worked. My own reflective journey can be compared to a *Service Blueprint*[60]; the front-stage blueprint encompasses the *touchpoints* I encounter in my own organisation, such as senior management and frontline staff, emails and conversations, workshops and meetings. The back-stage blueprint includes my thoughts and feelings, reflective practice, understanding and acceptance, at each stage of the journey. Service Design has allowed me to merge my creative skills with my analytical and technical expertise in order to simplify user experience and design and deliver solutions. I started out in 2013 never having heard of Service Design and now I consider myself a Service Designer.

My first foray into Service Design by means of a pilot project, RECAP, not only allowed me to try out a methodology, Action Research, but to also try out the tools of Service Design, on a problem within my own organisation. It gave me the time to evaluate everything good and bad about this project before embarking on further cycles of action research. It allowed me to undertake work in my own organisation whilst engaging in my own research and learning and developing expertise in an area I felt

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[60] Service Blueprints are used in a number of cycles including RECAP, Magnifeye and Exam Paper Submission and examples of each can be seen in the Appendices.

passionate about. Following on from this, each cycle of action allowed me to communicate and sell a new idea and concept to the organisation, reflect on that, and make improvements for the next cycle, all whilst gaining support from my supervisors and the network of experts I had developed in industry and academia.

The action research process is closely aligned with the Design Thinking process and the emphasis on divergent and convergent thinking in each cycle and across all seven cycles, fostered my leadership and support for all things Service Design. Action research allowed me to analyse the outcomes from one cycle, shifting my approach for the next cycle, maybe revisiting something that did not work in the previous cycle and changing tact for the next one. For me, it was about constantly reshaping and reflecting, questioning what I was doing and why, what I was trying to achieve, all the while focusing on the end goal and research question.

I spent over four years immersed inside the organisation as a researcher, practitioner and employee. I came across many problems and tackled those problems using Service Design tools from several angles. Organising training and events and setting up a Service Design Hub to support staff and management, became part of my practice and part of who I have become within the organisation, with several requests to organise events for CIT's 2018 Innovation Week.

Leader, facilitator and change agent

Traditional service development methods entail the art of persuasion; pushing solutions and ideas top down, whereas the value of the approach I have taken, is facilitating, encouraging and galvanising stakeholders towards open-minded collaboration and co-design, to solve their own service problems. My job is really to help people overcome their fears and any existing barriers to change. I learned how I contributed to change, by applying my own sensibilities and methods, to enable others to problem solve, for example when running a workshop, my energy, voice, body language and confidence could unwittingly influence the outcomes of the workshop. If I really felt passionate about something, then those were the areas that I saw most improvement. The more workshops I delivered and the more I used Service Design tools, the more my confidence grew and the more I believed in the power of Design Thinking and could sell it to the organisation.

My role as a facilitator was not about telling people how to do their jobs or change their processes, but enabling them to use design to realise this themselves. At times I needed to step back and "let go of the oars", which led me to think of the analogy of rowing and Design Thinking, in a sense I was similar to a coxswain in a rowing quadruple scull. From my experience as a rower, all four people in the boat need to work together with the coxswain steering, guiding and giving instructions. The boat crew work as a team, coming up with a tactical racing strategy and everyone is clear about their role in the boat. Design thinking requires an organisation to work as a team across silos, identifying problems and opportunities, and designing better services for students and staff, connecting our actions across the organisation. A facilitator or change agent guides this process.

As a facilitator, I needed to be responsive to the personalities and energy in a workshop, for example, if front-line staff were sitting beside senior management, then in some cases, they were less likely to impart the full story or their true feelings. Using tools without conversation can help this and allow everyone to participate equally.

As a leader of change projects, things often do not go as planned or predicted and it is important to reflect, learn and build on those challenges. I wondered if we needed leaders with creativity to effect change rather than lots of people trained in Design Thinking tools and techniques? I often questioned if I was going about things the right way. I targeted people and leaders who I thought were more open to change, but does that matter when people do not have the time to be creative in their roles? Is it up to the individual or the organisation to make time? Do people jump on the organisational merry-go-round and then are afraid to jump off and try something different? Throughout the research journey, I cultivated my own skills in order to help people take the leap of faith. These included:

- **Empowering and leading** people towards change
- **Confidence** in my own abilities and what I was selling to the organisation
- **Patience** with the change process
- **Tolerance** for people who were keen on stability in their work and reluctant to change

- **Facilitation** of groups and workshops and being able to bring the best out of a team or situation

- **Listening** to all sides of a story

- **Empathy** with users and making sure they felt respected and heard

- **Standing back**, letting go and allowing things to happen naturally

- **Perseverance** when things got tough

Becoming a designer

Design Thinking teaches us to be empathetic towards our end users and not only did I try to encourage this among participants at workshops, I became more empathetic as a professional and a designer. Design Thinking engages us in an iterative process, constantly evaluating our ideas and going back to the "discover" and "define" stages and then reflecting on what we have learned. It is very focused on thoughts and feelings and taught me as a practitioner to become more self-aware in my practice and how I influence situations. It is certain then that through the process of trying to introduce and embed Design Thinking in my own organisation that I became a better reflective Design Thinker.

There are some immediate advantages as an inside-out designer, such as having a good understanding of the business, being easily able to build empathy with users, having the respect of colleagues, and more time and influence to embed change within the organisation and make it stick. Design Thinking allowed higher levels of collaboration, problem definition, iteration and ideation where previously not as much time was spent on these critical activities. Although some stakeholders were somewhat sceptical, insisting that Design Thinking "takes too long", no one deterred me along the way. In my opinion, the resistance that I encountered was due to apathy, rather than not believing in this new way of working, based on lack of engagement and feedback from some project sponsors.

My learning

I have learned a huge amount throughout this doctorate and I decided to summarise some of those reflections and learnings that nurtured me as a researcher, designer and practitioner.

1. Communication is the most important part of anything that I do and I should never assume that:
   - Someone else has communicated
   - People understand what you have communicated
   - All relevant people have been communicated to.

2. Different facilitation skills and techniques are required for each project and for each group of stakeholders.

3. Ask more questions and do not be afraid to ask the awkward questions.

4. Allow senior management to deal with the politics and try not to permit individual opinions to overwhelm the small innovations, which are happening every day.

5. Anxiety and anticipation are part of the learning process, when hosting workshops and group activities. Being just one step ahead of the group is all that is required, and participating more in the workshops myself can yield positive outcomes. I have learned something from every workshop I have hosted:
   a. The group dynamics can be challenging when trying to keep the group focused on the task at hand.
   b. One negative person can stifle the opinions and ideas of a group but I have learned to deal with this by taking ownership of the situation.
   c. Sometimes the people you expect to contribute the least, can actually contribute the most.

6. Worrying whether people will understand Design Thinking and how it will affect their jobs is pointless. I have learned to stop trying to sell Design Thinking and focus on the outcomes the process can deliver.

7. I need to consistently push myself and others, to be more creative when facing problems; people often want to go with the first idea that pops into their head or do something safe, because they fear change.

8. My role as a Business Analyst in IT Services at CIT is not always clear to the various stakeholders and this needs to be explained at the start of each project. I think people feel threatened by my presence and unsure as to what

my motivation is. I need to explain to these audiences that I do not want to own a process but facilitate them to make their processes better.

9. Observation is really important; observing how staff perform a task, or how students use a service. I should never assume anything.

10. I have realised that one of the reasons there has not been more progressive change in higher education institutions, is that people work in silos. For change to happen, these boundaries need to be broken down to allow for cross-functional knowledge sharing; people do not feel comfortable with this and almost feel like they are losing control or power, if they collaborate.

11. I can empower people with my eagerness and vision for change. I have good leadership skills and I am constantly seeking new opportunities.

12. I have facilitated conversations that may have never happened and resulted in positive transformations.

What I have come to realise is that I have a dual set of skills, the creative and the analytical and that these two traits are important when trying to embed a design approach in an organisation that needs a combination of technical, cultural, organisational and analysis skills. My own practice changed to become one more focused on outcomes than process, on asking more questions and spending more time in the problem space during each project or challenge.

13.3 The Impact of My Practice on the Organisation

In 2013, when embarking on this research journey, Ireland was just emerging from an economic recession and the higher education sector was experiencing spending cuts, growing student numbers and decreasing numbers of academic and administrative staff; it was under pressure as never before. In terms of service delivery, CIT was managing to deliver key services, with little improvement or innovation happening, in between the busy cycles of administrative workload. It was almost like the college was yearning for a new approach to wrench it out of the cycles of tradition and old habits. Higher education processes are driven by tradition and organic growth, rather than need, and lack simplicity and innovation.

I came across the notion of liminal spaces, the moments of change that lie between the known and unknown. A liminal space can be described as a place of change, waiting and not knowing. In relation to action research, a liminal space can be described as space to reflect, contemplate, probe barriers and get control over road-blocks (Reason and Bradbury, 2005). I wondered if the introduction of Service Design to CIT was in a liminal space. After it was introduced, it was vital to create the space for it to thrive and become fully embedded. In a sense, I was also in a liminal space with a sense of ambiguity about what was coming next. A significant breakthrough came after the Service Design Master Class when some key business areas proposed using Service Design for a number of workshops to redesign some of their key processes.

When reflecting on how much my research has contributed to CIT's professional practice, three things need to be considered:

- Culture, how we do things around here
- Commitment; to embedding a new way of doing things
- Capacity; resources, skills and experience

Many of the blocks that I came up against when trying to implement change were people based. On one side, management and colleagues were very supportive and encouraging of the Service Design process and could clearly see the benefits, but on the other side, they were not providing the space, budget and dedicated resources to embark on real transformation.

CIT's culture rests in leadership: it is leadership's responsibility to set the culture in which employees can feel empowered to take risks and innovate. What was different in the context of this research was using Service Design practice to influence leaders to change their mind-set, and in time transform the mind-set of those staff reporting to them. I struggled to tackle the deeper problem of organisational structures and processes, along with the general fear of change, lack of urgency and sometimes a lack of willingness to try something new. What I did achieve in the organisational context was what I set out to achieve:

- A step towards joined-up thinking across silos and towards service-oriented experiences

- The use of Service Design tools and techniques as an investigative approach, to discovering, defining and resolving existing problems in higher education administration, is now an approach that works at CIT.

- Using a co-design approach to reveal the tacit knowledge buried in people's heads, encouraging people to listen, observe and share and to question the inefficiencies happening around them.

What I saw throughout the research process was that many organisations employ service designers as external agencies, who come in, shake up the organisation and leave. What is unique about this practice, is that although it has taken longer to embed Service Design across the organisation, it is my view that this approach will have a more sustainable impact in the long-term. Sometimes you do not need to be in a position of power to influence change and what I noticed about this practice, was that although I was not a key decision maker, I did have the power to guide those at the top of the organisation in understanding how Service Design could benefit the organisation.

How did the organisation change?

CIT now uses Service Design tools across a number of projects and departments. A large number of both technical, administrative and academic staff and a range of students from varied disciplines have been immersed in the tools and techniques of Service Design. Five students were influenced at a deeper level when they learned to use Service Design tools and techniques as part of their work placement, helping to design and facilitate workshops, gather data and design solutions. They saw the changes happening in front of them, across services that they could directly relate to as students. CIT's design capacity continues to grow and conversations are happening across a variety of areas, not just administrative services, but academic discourse, including, how can we as design educators work more collaboratively together across disciplines.

The cultural shifts in the organisation are moving away from being solution focused to spending time questioning how to approach a problem. A debate has opened up among the senior management team around where the Service Design Hub should sit and who should be responsible for improvement across services. The answer is that

everyone is responsible, and the reason that this debate is happening is because a large percentage of those senior managers now understand what Service Design is, as a result of this research and practice, and realise the possibilities of changing how we do things at CIT.

What could I have done differently?

I wonder if I had waited at the start of this research process, to get full senior management buy-in, would things have happened in a more cohesive way? My feelings are that I would still be waiting, and the approach I took means that I have affected many parts of the organisation and planted a seed in the minds of many people, creating a far greater impact.

As a result of this research, CIT:

- has become an example of how to use Service Design to improve higher education services. Many higher education institutions are teaching Service Design, but few are using it to improve their own services.
- is the only academic institution involved in the organising committee of the Service Design Global conference in Dublin for 2018.
- is delivering the only third level programme in Service Design in Ireland; the Certificate in Designing Innovative Services.
- is the only higher education institution partnering with a local council, to design and deliver services.

13.4 The Research Process

Every project or cycle had a different intention, so at the beginning of a project, I would define what the desired outcomes or outputs would be and then work backwards, designing the agenda for workshops, picking the tools that I thought would be most suitable for a task. Service Blueprinting was used a lot because we always needed to see how a part of a service was currently operating, before we could think about re-designing it. For the pilot project, RECAP, the tools we used were the ones I learned from the JISC enrolment project at the University of Derby.

As a new practitioner, I went to conferences and seminars, researched the literature to learn how other experts approached projects and what tools they used. I took those

learnings back to my own practice. I followed Design Thinkers on Twitter and as they tweeted about workshops they were running or tools they were using, sometimes I would follow up with my own research. I was learning by doing, trying out techniques in a workshop and then reflecting and evaluating that technique. Some tools worked better than others.

Sometimes I invented tools on-the-fly, for example, during the Exam Paper Submission project workshops, while participants were completing the as-is Service Blueprint, they kept zooming in on pain points and although I wanted to capture them and encourage discussion, the main goal was to produce a blueprint. I created a "Wall of Pain" where participants could write each pain point on a card and post it onto the wall, in order of painfulness! Looking back, I think this was a key moment in my own learning as a facilitator and Service Designer, realising my own ability to adapt and be flexible during workshops and projects. By not sticking rigidly to the agenda, but using it as a guide, I realised I could achieve the most out of a workshop and the participants in the room, at a given point in time. Becoming a Service Designer, is much more than using a set of tools and techniques, for me it is about thinking on my feet, with a designerly mindset, and being responsive to users' needs as they emerge during a workshop; an adaptive human-centred Service Design facilitator.

During cycle seven and the establishment of the Service Design Hub, a workshop was organised to demonstrate how Design Thinking could be used as part of the merger of CIT and IT Tralee. Post workshop, I was being particularly critical of myself when a colleague forced me to evaluate all the positive, negative and interesting aspects of the workshop (Table 18). I endeavoured to use these to make improvements in my own practice, while also improving the experience for those attending workshops. In fact, Edward De Bono and his critical thinking tools became my firm friends throughout the journey. Each time I delivered a workshop, I reflected on the workshop; what went well and what I would improve next time. I pondered my own behaviour and self-confidence when leading and facilitating a workshop using a set of tools and techniques that I was still learning to use. For example, the use of mobile phones by participants can be extremely distracting to other attendees but in some workshops, I felt that people were doing me a favour by taking time out of their day to attend, and I could not ask them to put away their phones, especially senior

managers. How I behaved in these situations and how that affected the workshop became a learning journey for me. As my confidence grew and as I reflected on what I was doing and why, I became more relaxed about the flow of the workshops and felt less need to control every possible scenario. I needed to be flexible and adaptable and lead a range of different people and this became possible by being present and mindful, and in a sense, a participant as well as a facilitator.

Positive	Minus	Interesting
We got to the bottom of the history of the blue form	People on mobile phones - need people in the room - distracting for other users - taking energy from the group	Process clarity would clear up a lot of the existing issues
Honesty around HR "control"	People arriving late and leaving early	Use a buzzword to bring people back to the task at hand e.g. "cucumbers"
Everyone could see room for improvement	Need more "customers" in the room as part of the re-design	All agreed that recruitment planning should be done earlier
Open collaboration between two IoT's	Don't do as-is and to-be on the same day – need time to absorb the as-is along with fail and wait points	I felt that a lot of what goes on is dependant on who is asking – this is unfair to all involved
Everyone was open to ideas	At the end of workshop 1, plant some seeds	Automation would mean transparency and consistency
Recognition of the need for a formal process for collaboration	Need more time commitment to work on "live" projects like this	Very few PWT positions in Tralee
Senior staff from both IoTs at the same table	Need a brainstorming session in the middle of as-is and to-be	
	Set the expected finish time at a half hour later than the workshop should finish as people get ready (in their heads) to leave at 4pm	
	Conversations happening that are not within the goalposts of the process	
	The process seems to be different depending what department you are in or who you report to	
	Information is often missing from the forms	

Table 18: Using De Bono's PMI tool to reflect after a workshop

When starting out on the RECAP project, I dived straight into the "swampy lowlands" Schon (1984), a confusing mess of processes and tasks, that created a huge impact on the part-time student. It was a good, but challenging place to start, as many people had developed an empathy and understanding of the part-time student journey, but felt paralysed to do anything about it, as the process spanned so many departmental silos. Experience had taught me that tackling those messy problems, can have both a greater impact and a chance to influence a wider audience.

I started to get excited about the small interventions because I could see the possibility of them turning into something really positive and long term. For example, during RECAP, we manually captured the face-to-face queries on paper at some front-line services during the first three weeks of semester one. This practice has since

become embedded and automated for the IT Services helpdesk and is used to schedule part-time staff rotas and update the student portal, with new information.

Post RECAP, while conducting research into the existing literature, I could see a huge gap in the higher education and public sectors. I was faced with a double challenge from my position at the middle of the organisation, winning over both senior management and front-line staff at the same time. Through my own professional practice, presenting my ideas and challenges to Service Design audiences, I was able start answering some of my own questions, whilst building up a huge network of experts and advisors.

My findings challenged some of the literature, that small successes do not encourage people to think creatively in the long-term, and the importance of professional designers trying to embed a new culture. I proved that small successes have encouraged people to start thinking more creatively and although I did not think of myself as a professional designer when starting out, I think I have created a new version of myself and a new version of the organisation in which I work.

Action research allowed me to not only develop my own professional practice, but to deliver change, reflect upon that change and make the right decision about what to do next. Action research also garnered stakeholder engagement in the Service Design process, as it works "for" them rather than "on" them. Action research brought research into my day-to-day practice, allowing both me and all the stakeholders involved in each cycle, to reflect and contribute to our own learning and development. Although each cycle brought a range of stakeholders together focused on a particular problem or task, not only did they define and solve that problem, but each participant took their own learning away from that task, workshop, or project.

13.5 Chapter Summary

It is important for the role of practice-based researcher to reflect and engage in conversation with those inside and outside the organisation, in order to vary approach and thinking. Many of my biggest learnings came from the network of Design Thinkers that I connected with, through attending conferences, writing journal papers and giving presentations where I could. The feedback from peers, experts and non-

experts helped me to grow as a practitioner and spurred me on to the next stage of my research. The network grew and the suggestions of "you should read this book" or "you should speak to this person" enabled me to develop as both a researcher and a practitioner. There are many examples of this throughout the journey. Some of the highlights are:

- Discovering the enrolment project at the University of Derby and engaging with colleagues there, introduced both me and CIT to the tools and techniques of Service Design and to practitioners in a similar sector.

- Sending an enquiry email to the regional director of Irish Design 2015, sceptical whether Service Design would be considered one of the areas they wanted to promote, and the result being the first Service Design Master Class in Cork.

- The Service Design Master Class led to co-authoring an article for *Iterations Design Research* journal entitled "Moving towards user-centred services in the public sector" with one of the mentors on the day, Dr Linzi Ryan.

- By following an associate from Imagination Lancaster on Twitter, I enrolled on FaceMooc: a five-week online course in co-design. The experience generated inspiration, ideas, knowledge and support when starting out on the Magnifeye project. Two mentors[61] provided advice and critical feedback and helped me to focus on the purpose of the project.

- Engaging in discussion on LinkedIn groups, such as the Design Thinking group, led to a number of follow-up conversations; a call with Philippe Colloumb, from *Where To From Here* gave direction and advice on setting up a Service Design Hub.

- Providing a quote to an article for the Service Design Network on *Service Design in the Public Sector* subsequently connected me with my colleagues in Cork County Council when they made contact with Birgit Mager[62] in November 2016.

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[61] Cindy Van Bremen and Wina Smeenk are design lecturers at Technische Universiteit Eindhoven, The Netherlands and acted as mentors on the FaceMooc project.
[62] Birgit Mager is President of Global Service Design Network and Service Design Professor at KISD, Germany.

By embarking on this journey of professional development, my career has been hugely impacted and many new possibilities have opened up for me. I aim to continue this journey of learning. I fulfilled multiple roles throughout this research; coach, designer, analyst, problem-solver but certainly one of the most important roles was that of educator; educating those around me and empowering them to take ownership of the issues in their areas by giving them the tools and techniques to create better services.

What I found difficult about this journey was accepting that change is not always possible in certain situations. Throughout, my frustrations were mostly aimed at people rather than practices and I went through a range of emotions during the four years; acceptance, anger, anticipation, disgust, joy, fear, sadness and surprise. However, I learned to accept that not everyone has the same appetite for change as me. I am ending this research expedition on a high; satisfied that I have accomplished prodigious changes in myself and in the organisation where I work. There is also a sense of excitement about where this voyage will take me next.

This journey started with introducing a new methodology to a higher education institute and the valuable and lasting change is a Service Design Hub, a new programme "Designing Innovative Services", a partnership with a local county council and a senior management team who all know what Service Design is and how it can help us. All these changes built on each other over the course of five years. The cultural shifts will take longer

References

Afshar, V., 2014. *FCC CIO: 5 Ways to Create Change in a Change-Averse Culture* [online]. Huffington Post. Available from: http://www.huffingtonpost.com/vala-afshar/fcc-cio-5-ways-to-create_b_4860704.html [Accessed 12 January 2017]

Akama, Y. (2009), Warts-and-all: the real practice of service design. First Nordic conference on service design and service innovation, Oslo, Norway, 24th – 26th November. Available from: http://www.ep.liu.se/ecp/059/ecp09059.pdf [Accessed 17 November 2017].

Akama, Y., Prendiville, A. (2013), Embodying, enacting and entangling design: A phenomenological view to co-designing services. *Swedish Design Research Journal*, 1, 29-40.

Albinsson, L., Forsgren, O. (2005). Co-Design Metaphors and Scenarios-Two Elements in a Design Language for Co-Design. Presented at the The Language Action Perspective on Communication Modelling, Kiruna, Sweden.

Anderson, D., Ackerman Anderson, L., 2014. Why Leading Transformation Successfully Requires a Shift of Leadership Mindset [Online]. Change Leader's Network. Available from: http://changeleadersnetwork.com/free-resources/why-leading-transformation-successfully-requires-a-shift-of-leadership-mindset [Accessed 24 November 2014].

Bailey, J., Julier, J., Kohut, T., 2014. *Restarting Britain2: Design and Public Services*. Annual Review of Policy Design, 2, 1–10. Available from: https://www.designcouncil.org.uk [Accessed 28 April 2015].

Bailey, S.G. (2012). Embedding service design: the long and the short of it. Proceedings of ServDes 2012: Third Nordic Conference on Service Design and Service Innovation, Espoo; Finland, 8th – 10th February. Available from: http://servdes.org/pdf/2012/bailey.pdf [Accessed 25 May 2016].

Baranova, P., Morrison, S., Mutton, J. (2010). Service design in higher and further education, JISC Briefing Paper; Available from: http://publications.cetis.ac.uk/wp-content/uploads/2011/02/Service_Design.pdf [Accessed 28 April 2015).

Basadur, M. (2004). Leading others to think innovatively together: Creative leadership. *The Leadership Quarterly*, 15, 103–121.

Battarbee, K., Fulton Suri, J., Gibbs Howard, S. (2014). Empathy on the Edge: scaling and sustaining a human-centred approach in the evolving practice of design. IDEO. Available from: http://www.ideo.com/images/uploads/news/pdfs/Empathy_on_the_Edge.pdf [Accessed 28 April 2015].

Beyerle, M., Hammel, D., Schroder, J. (2011). The Change Agent's Secret, and How to Instil It in Organisations. *Touchpoint - The Journal of Service Design,* 3 (2).

Beckman, S.L. and Barry, M. (2007) Innovation as a learning process: Embedding design thinking. *California Management Review*, 1, 25.

Best, K. (2006). *Design Management: Managing Design Strategy, Process and Implementation*. AVA Publishing: Lausanne.

Bitner, M.J., Ostrom, A.L. and Morgan, F.N. (2008). Service blueprinting: a practical technique for service innovation. *California Management Review*, 50, (3), 66.

Blaxter, L., Hughes, C., Tight, M., (2006). *How to Research.* Third edition. Open University Press, Berkshire, England; New York, NY.

Bolton, G.E.J., (2010). Reflective Practice: Writing and Professional Development. Third Edition. SAGE Publications Ltd, London.

Borins, S. (2002). Leadership and innovation in the public sector. *Leadership and Organization Development Journal,* 23, 467–476.

Boyle, D., Harris, M., 2009. The Challenge of Co-Production; How equal partnerships between professionals and the public are crucial to improving public services. Nesta. Available from: http://www.nesta.org.uk/sites/default/files/the_challenge_of_co-production.pdf [Accessed 12 01 2017.]

Boyle, D., Slay, J., Stephens, L., 2010. Public services inside out. Putting co-production into practice. NESTA. National Endowment for Science, Technology and the Arts, London.

Brown, T. (2009). *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. New York: Harper Business.

Brown, J.S., Duguid, P., (1991). Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation. *Organization Science,* 2, 40–57.

Buchanan, R. (2007). Introduction: Design and Organizational Change. Design Issues, 24 (1), 2–9.

Burke, W.W. (2013). *Organization Change: Theory and Practice*. SAGE Publications Ltd.

Burnes, B. (2004). Emergent change and planned change – competitors or allies? *International Journal of Operations and Production Management,* 24, 886–902.

Candy, L., 2006. Practice based research: A guide. CCS Report, 1, 1–19.

Cameron, K. (1978). Measuring Organizational Effectiveness in Institutions of Higher Education. *Administrative Science Quarterly,* 23, 604–632.

Campbell, D. (2014). Local Government Chronicle. Open innovation in public services: Ideas have to be flexible to fly. Available from: https://www.lgcplus.com/politics-and-policy/open-innovation-in-public-services/5062757.bloglead [Accessed 12 January 2017].

Carnegie, D. (1995). *The Leader in You: How to Win Friends, Influence People and Succeed in a Changing World*. New York: Simon and Schuster.

Carr, V.L. (2012). LEAN and Service Design: Understanding the differences. Available from: http://wearesnook.com/snook/?p=5295 [Accessed 3 April 2016].

Claver, E., Llopis, J., Gascó, J.L., Molina, H., Conca, F.J. (1999). Public administration: From bureaucratic culture to citizen-oriented culture. *International Journal for Public Sector Management,* 12, 455–464.

Clay, A., 2013. *Five Tips For Growing Change-making Communities In Your Company* [Online]. Available from: http://www.fastcoexist.com/3023052/5-tips-for-growing-changemaking-communities-in-your-company [Accessed 12 January 2017].

Coghlan, D., Brannick, T., (2014). *Doing Action Research in Your Own Organization*. SAGE Publications Ltd.

Coghlan, D., Holian, R., 2007. Editorial: Insider Action Research. *Action Research,* 5, 5–10.

Cooper, R., Junginger, S. and Lockwood, T. (2013). *The Handbook of Design Management*. A&C Black, Berg Publishers. U.K.

Costley, C., Elliott, G.C., Gibbs, P. (2010). *Doing work based research: Approaches to enquiry for insider-researchers*. SAGE Publications Ltd.

Covey, S.R., (2014). *The 7 Habits of Highly Effective Families*. St. Martin's Press.

Cruickshank, L., Whitham, R., Morris, L. (2012). Innovation through the design of knowledge exchange and the design of knowledge exchange design. *Presented at International Design Management Research Conference.* Boston, USA.

De Lille, C., Roscam Abbing, E., Kleinsmann, M. (2012). A Designerly approach to enable organisations to deliver product-service systems. *Presented at the International Design Management Conference.* Design Management Institute, Boston.

Dervojeda, K., Verzijl, D., Nagtegaal, F., 2014. Design for Innovation: Service design as a means to advance business models. European Commission. Available from: http://ec.europa.eu/DocsRoom/documents/13406/attachments/2/translations/en/renditions/native [Accessed 12 January 2017]

Design Council, 2011. *Design Methods for developing services*. Design Council; Technology Strategy Board UK.

Design Council, 2013. *Design for Public Good*. Annual Review of Policy Design, 1, 1–50. Design Council; Technology Strategy Board UK.

Dorst, K., (2010). The Nature of Design thinking. *Presented at 8th Design Thinking Research Symposium: Interpreting Design Thinking*, Sydney, Australia.

Droll, P., 2013. *Powering European Public Sector Innovation: Towards a New Architecture; Report of the Expert Group on Public Sector Innovation*. European Commission, Brussels.

Fong, P.S.W. (2003). Knowledge creation in multidisciplinary project teams: an empirical study of the processes and their dynamic interrelationships. *International Journal of Project Management,* 21, 479–486.

Forss, H., 2014. Are you too busy to improve? Hakan Forss's Blog. Available from: https://hakanforss.wordpress.com/2014/03/10/are-you-too-busy-to-improve/ [Accessed 20 April 2017].

Fox, T., Brewer, H., 2010. *Innovation in Government*. IDEO and Partnership for Public Service.

Fullan, M., Scott, G. (2009). *Turnaround Leadership for Higher Education*. John Wiley and Sons.

Galea, A., (2009). Breaking the barriers of insider research in occupational health and safety. *Journal of Health and Safety Research and Practice,* 1, (1).

Gibbs, G., (1988). Learning by Doing: A Guide to Teaching and Learning Methods. FEU.

Gloppen, J. (2009). Service Design Leadership. *Presented at ServDes 2009: First Nordic Conference: Service Design and Service Innovation*. Oslo, Norway.

Gouillart, F.J. (2014). The race to implement co-creation of value with stakeholders: five approaches to competitive advantage. *Strategy and Leadership*, 42, (1), 2–8.

Gray, D.E., (2009). *Doing Research in the Real World*. SAGE Publications Ltd.

Hammer, M., and Champy, J. (2003). *Re-engineering the corporation: a manifesto for business revolution.* Harper Business. New York.

Harris, M., Albury, D., 2009. *The Innovation Imperative. Why Radical Innovation is needed to Reinvent Public Services for the Recession and beyond*. NESTA. Available from: http://socialwelfare.bl.uk/subject-areas/government-issues/social-policy/nesta/1516692009_innovation_imperative.pdf [Accessed 12 January 2017].

Hartley, J. (2005). Innovation in Governance and Public Services: Past and Present. *Public Money and Management*, 25, 27–34.

Hesse-Biber, S.N., Leavy, P., (2010). *The Practice of Qualitative Research*. SAGE Publications Ltd.

Holmlid, S. (2009). Participative, co-operative, emancipatory: From participatory design to service design. *Presented at ServDes 2009: First Nordic Conference: Service Design and Service Innovation*. Oslo, Norway.

Hughes, A., Moore, K., Kataria, N., 2011. *Innovation in Public Sector Organisations*. NESTA. Available from: https://www.nesta.org.uk/sites/default/files/innovation_in_public_sector_orgs.pdf [Accessed 12 January 2017]

Jenkins, J. (2008). Creating the right environment for design. *Design Management Review*, 19, 16–22.

Junginger, S. (2007). Product Development as a Vehicle for Organizational Change. *Design Issues*, 24, 26–35.

Junginger, S., Sangiorgi, D. (2009). Service design and organizational change: Bridging the gap between rigour and relevance. *Presented at the Third IASDR Conference on Design Research.* Seoul, Korea.

Junginger, S. (2014). Design Legacies: Why service designers are not able to embed design in the organization. Presented at ServDes 2014, Fourth Service Design and Innovation Conference. Lancaster, U.K.

Kattel, R., Cepilovs, A., Drechsler, W., Kalvet, T., Lember, V., Tõnurist, P., 2013. *Can we measure public sector innovation? A literature review.* FP7 LIPSE project paper. Available from: http://lipse.org/userfiles/uploads/kattel%20et%20al%20egpa%20version.pdf [Accessed 12 January 2017].

Kanter, R.M. (1984). *Change Masters*. London. Simon and Schuster.

Kanter, R.M. (2013). Nine Rules for Stifling Innovation. Harvard Business Review. Available from: https://hbr.org/2013/01/nine-rules-for-stifling-innova [Accessed 12 January 2017].

Kezar, A.J., Eckel, P.D. (2002). The Effect of Institutional Culture on Change Strategies in Higher Education: Universal Principles or Culturally Responsive Concepts? *The Journal of Higher Education,* 73, 435–460.

Kimbell, L. (2010). Design leads us where exactly? Service design at a crossroads. Presented as a keynote speech at Service Design Network Conference, Berlin. Available from: http://designleadership.blogspot.ie/2010/10/service-design-at-crossroads.html [Accessed 25 May 2016].

Kimbell, L. (2011). Rethinking Design Thinking: Part I. *Design and Culture: The Journal of the Design Studies Forum*, 3 (3), 285-306.

Kolko, J., (2009). Abductive Thinking and Sensemaking: The Drivers of Design Synthesis. *Design Issues,* 26, 15–28.

Koshy, V., (2005). *Action Research for Improving Practice*. Chapman Publishing.

Kotter, J. P. (1995). *Leading Change - Why Transformation Efforts fail [online].* Harvard Business Review. Available from: https://hbr.org/2007/01/leading-change-why-transformation-efforts-fail [Accessed 12 January 2017].

Krueger, R.A., Casey, M.A., (2008). *Focus Groups: A Practical Guide for Applied Research*. 4th edition. SAGE Publications Ltd.

Liedtka, J. (2010). Business Strategy and Design: Can this Marriage Be Saved? *Design Management Review*, 21, (2), 6–11.

Liedtka, J. (2011). Learning to use design thinking tools for successful innovation. *Strategy and Leadership*, 39, (5), 13–19.

Lin, M., Hughes, B., Katica, M., Zuber, C., Plsek, P. (2011). Service design and change of systems, human-centered approaches to implementing and spreading service design. *International Journal of Design*, 5, 73–86.

Lockwood, J., Smith, M. and McAra-McWilliam, I. (2012). Work-well: creating a culture of innovation through design. *Presented at Leading Innovation through Design: DMI 2012 International Research Conference, Boston.*

Lundy, O., Cowling, A., Lundy, O. (1996). *Strategic Human Resource Management*. Routledge.

Machiavelli, N. (2002). *The Prince*. Branden Books.

Maddock, S., Morgan, G. (1998). Barriers to transformation: Beyond bureaucracy and the market conditions for collaboration in health and social care. *International Journal of Public Sector Management*, 11, 234–251.

Marino, M. (2011). Creating a Framework for Organisations New to Service Design. *Touchpoint: The Journal of Service Design*, 3, (2).

Martin, R. (2007). Design and business: why can't we be friends? *Journal of Business Strategy*, 28, (4), 6–12.

Martin, R. L. (2009). *Design of Business: Why Design Thinking is the Next Competitive Advantage.* Harvard Business Review Press, Boston.

Martins, E. C., and Terblanche, F. (2003). Building organisational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6, (1), 64–74.

Matthews, J.H., Bucolo, S., Wrigley, C. (2012). Challenges and opportunities in the journey of the design-led innovation champions. Presented at DMI 2012 International Research Conference, Chulalongkorn University, Bangkok, Thailand.

McNiff, J., Whitehead, J., (2009). *You and Your Action Research Project*. Routledge.

McPhee, I. (2009). Innovation in the Public Sector: Enabling Better Performance, Driving New Directions. *Public Administration Today*, 26.

Miller, K., Moultrie, J. (2013). Understanding the Skills of Design Leaders. *Design Management Journal*, 8, (1), 35–51.

Moritz, S. (2005). *Service Design - Practical Access to an Evolving Field*. London.

Mulgan, G. (2007). *Ready or Not? Taking Innovation in the Public Sector Seriously.* NESTA. Available from: https://www.nesta.org.uk/sites/default/files/ready_or_not.pdf [Accessed on 12 01 2017].

Mulgan, G., 2014. *Design in public and social innovation, what works and what could work better*. NESTA. Available from: https://www.nesta.org.uk/sites/default/files/design_in_public_and_social_innovation.pdf [Accessed 12 01 2017].

Mulgan, G., Albury, D., 2003. *Innovation in the public sector*. Strategy Unit, Cabinet Office. Available from: https://www.nesta.org.uk/sites/default/files/innovation_policy_in_the_modern_world.pdf [Accessed 12 01 2017].

Mumford, M.D., Scott, G.M., Gaddis, B., Strange, J.M. (2002). Leading creative people: Orchestrating expertise and relationships. *The Leadership Quarterly*, 13, (6), 705-750.

Ostrom, A. L., Bitner, M. J., and Burkhard, K. A. 2011. *Leveraging Service Blueprinting to Rethink Higher Education: When Students Become Valued Customers*. Center for American Progress. Available from: http://files.eric.ed.gov/fulltext/ED535642.pdf [Accessed 12 01 2017].

Parker, S. and Heapy, J. 2006. *The Journey to the Interface: How public service design can connect users to reform*. Engine Design, London Available from: http://www.demos.co.uk/files/journeytotheinterface.pdf [Accessed 12 01 2017].

Paterson, C., Chapman, J., (2013). Enhancing skills of critical reflection to evidence learning in professional practice. *Physical Therapy in Sport,* 14, 133–138.

Patton, M.Q., (2014). *Qualitative Research & Evaluation Methods: Integrating Theory and Practice.* SAGE Publications Ltd.

Peter, K., Paul, T. (2001). *Departmental Leadership in Higher Education*. McGraw-Hill Education. U.K.

Reason, P., Bradbury, H., (2005). Handbook of Action Research: Concise Paperback Edition. SAGE Publications Ltd.

Rodgers, C., (2002). Defining Reflection: Another Look at John Dewey and Reflective Thinking. *Teachers College Record, 104,* 842–866.

Roser, T., Samson, A., Humphreys, P., Cruz-Valdivieso, E., 2009. *Co-creation: New pathways to value; an overview.* LSE Enterprise. Available from: https://www.researchgate.net/publication/272566751_Co-creation_New_Pathways_to_Value_An_Overview [Accessed 12 01 2017].

Sanders, E.B.-N., Stappers, P.J. (2008). Co-creation and the new landscapes of design. *Co-design,* 4, 5–18.

Sangiorgi, D., (2011). Transformative services and transformation design. *International Journal of Design,* 5, 29–40.

Schön, D.A., (1983). *The Reflective Practitioner: How Professionals Think in Action*. Basic Books.

Schraeder, M., Tears, R.S., Jordan, M.H. (2005). Organizational culture in public sector organizations: Promoting change through training and leading by example. *Leadership and Organization Development Journal,* 26, 492–502.

Seddon, J. (2008). *Systems Thinking in the Public Sector: The Failure of the Reform Regime... and a Manifesto for a Better Way.* Triarchy Press Ltd, Axminster, United Kingdom.

Seelig, T. (2012). *InGenius: A Crash Course on Creativity*. HarperOne, New York.

Shani, A.B., Mohrman, S.A., Pasmore, W.A., Stymne, B., Adler, N., (2007). *Handbook of Collaborative Management Research*. SAGE Publications Ltd.

Shostack, G. L. (1984). Designing services that deliver. *Harvard Business Review*, 62, (1), 133–139.

Snook and Design Managers Australia (2014), Service Design Principles for Working with the Public Sector. Available from: http://designmanagers.com.au/wp-content/uploads/2014/06/dma_snook_article.pdf [Accessed 12 January 2017].

Steen, M., Manschot, M., De Koning, N. (2011). Benefits of co-design in service design projects. *International Journal of Design,* 5, 53–60.

Stickdorn, M., Schneider, J. (2012). *This is Service Design Thinking: Basics-Tools-Cases*. BIS Publishers.

Strebel, P., 1996. *Why do Employees Resist Change*. Harvard Business Review. Available from: https://hbr.org/1996/05/why-do-employees-resist-change [Accessed 12 01 2017].

Stuart, F.I. (1998). The influence of organizational culture and internal politics on new service design and introduction. *International Journal of Service Industry Management*, 9, 469–485.

Thompson, N., (2009). *People Skills: Third Edition*. Palgrave Macmillan, Basingstoke England; New York.

Thompson, S., Thompson, N., (2008). *The Critically Reflective Practitioner*. Palgrave Macmillan, Basingstoke England; New York.

Thomson, M., Koskinen, T. 2012. *Design for growth and prosperity: report and recommendations of the European design leadership board*. European Commission. Directorate-General for Enterprise and Industry. Helsinki, Finland.

Tjendra, J. 2013. *Why Design Thinking Will Fail*. Innovation Excellence. Available from: http://www.innovationexcellence.com/blog/2013/02/25/why-design-thinking-will-fail/ [Accessed 28 April 2015].

Trafford, V., Leshem, S., (2008). *Stepping Stones to Achieving your Doctorate: Focusing on your viva from the start*. Open University Press, Maidenhead; New York.

Trkman, P. (2010). The critical success factors of business process management. *International Journal of Information Management*, 30, 125–134.

Tushman, M.L. (1997). Winning through innovation. *Strategy and Leadership,* 25, 14–19.

Valkama, P., Anttiroiko, A.-V. (2009). Organisational Innovation in Public Services: Competition and Collaboration in Finnish Public Service Delivery. *Presented at the Innovation for Good Local and Regional Governance - A European Challenge.* Enschede, The Netherlands.

Vicious circle. (n.d.). Collins English Dictionary - Complete & Unabridged 10th Edition. Available from: http://www.dictionary.com/browse/vicious-circle [Accessed 29 04 2017].

Von Stamm, B. (2008). *Managing Innovation, Design and Creativity.* Wiley, Chichester, UK.

Wechsler, J. (2012). Reflections on service design, frameworks, and the service organization. *Design Management Review*, 23, 58–64.

West, M.A., Farr, J.L. (1990). *Innovation and Creativity at Work: Psychological and Organizational Strategies*. Wiley.

Whicher, A., Swiatek, P. and Cawood, G. (2013). *An Overview of Service Design for the Private and Public Sectors.* Sharing Experience Europe; European Commission. Available from: http://www.seeplatform.eu/docs/SEE%20Platform%20policy%20booklet%207.pdf [Accessed 12 01 2017].

Yee, J., White, H. and Lennon, L. (2015). *Valuing Design: mapping design impact and value in six public and 3rd sector projects*. UK Arts and Humanities Research Council. Available from: http://valuingdesign.org/ValuingDesign_Report_2015.pdf [Accessed 12 01 2017].

Appendix A | Pilot Project Report
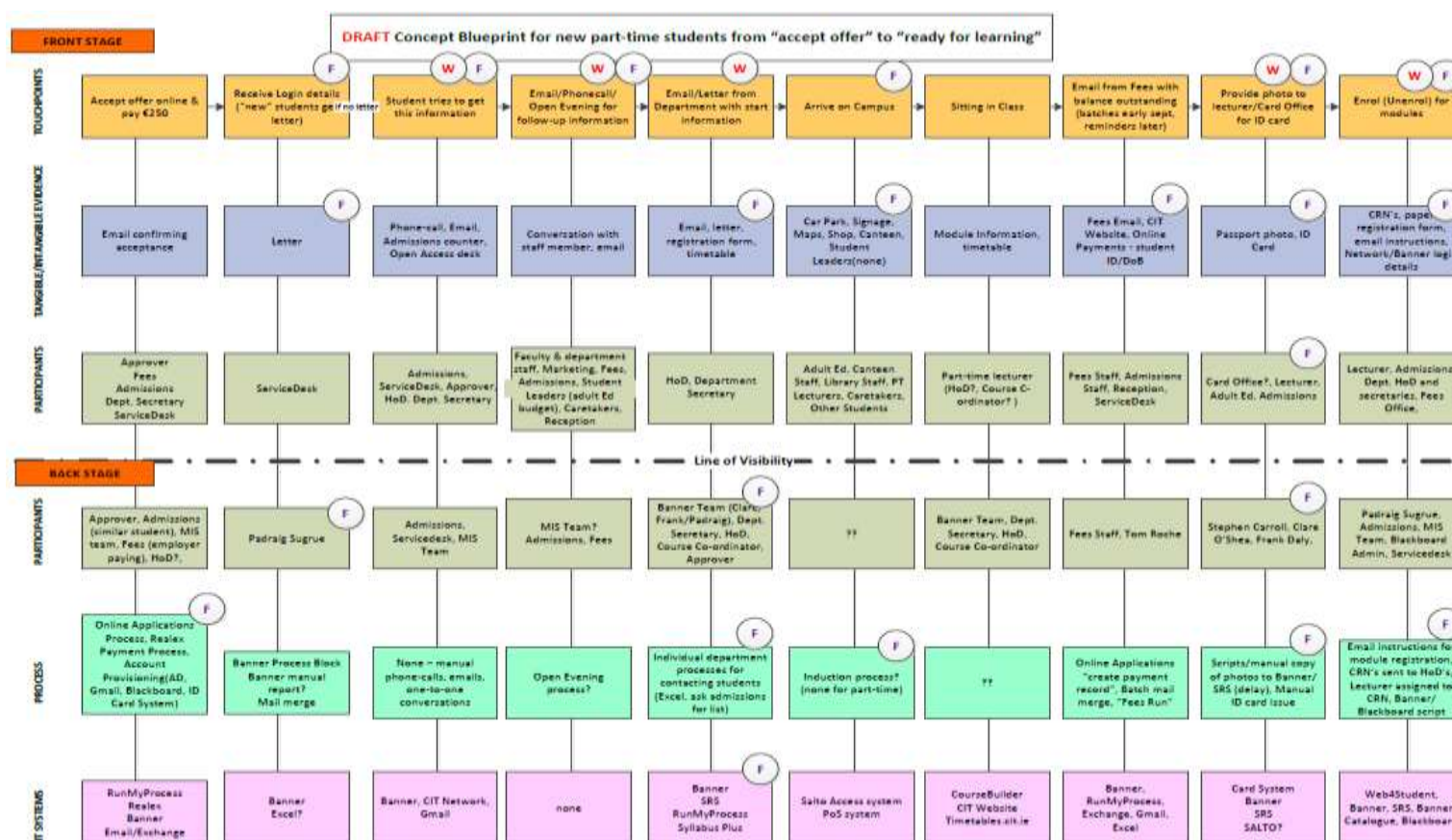
Figure 65: RECAP as-is *Service Blueprint*
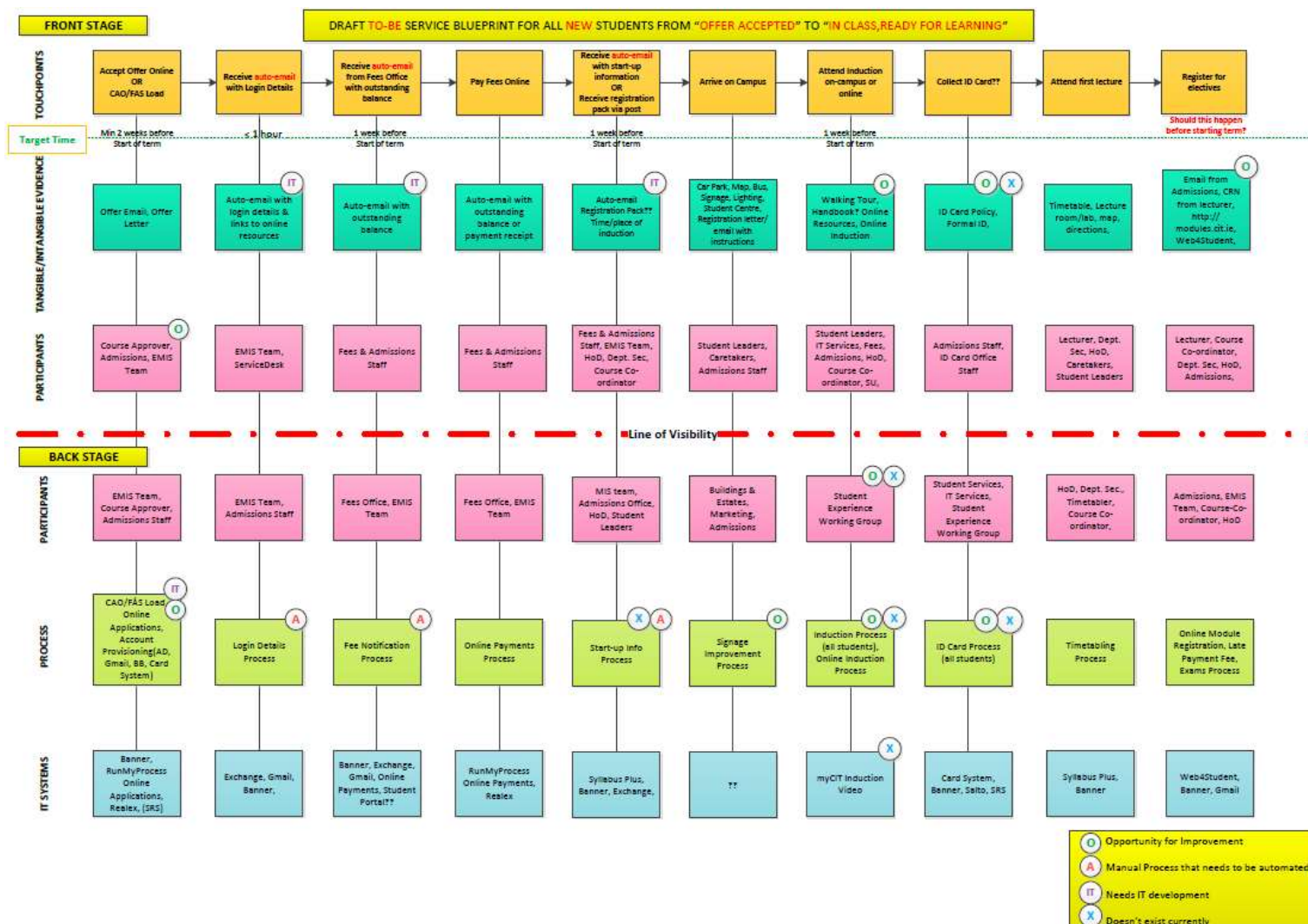
Figure 66: RECAP to-be *Service Blueprint*
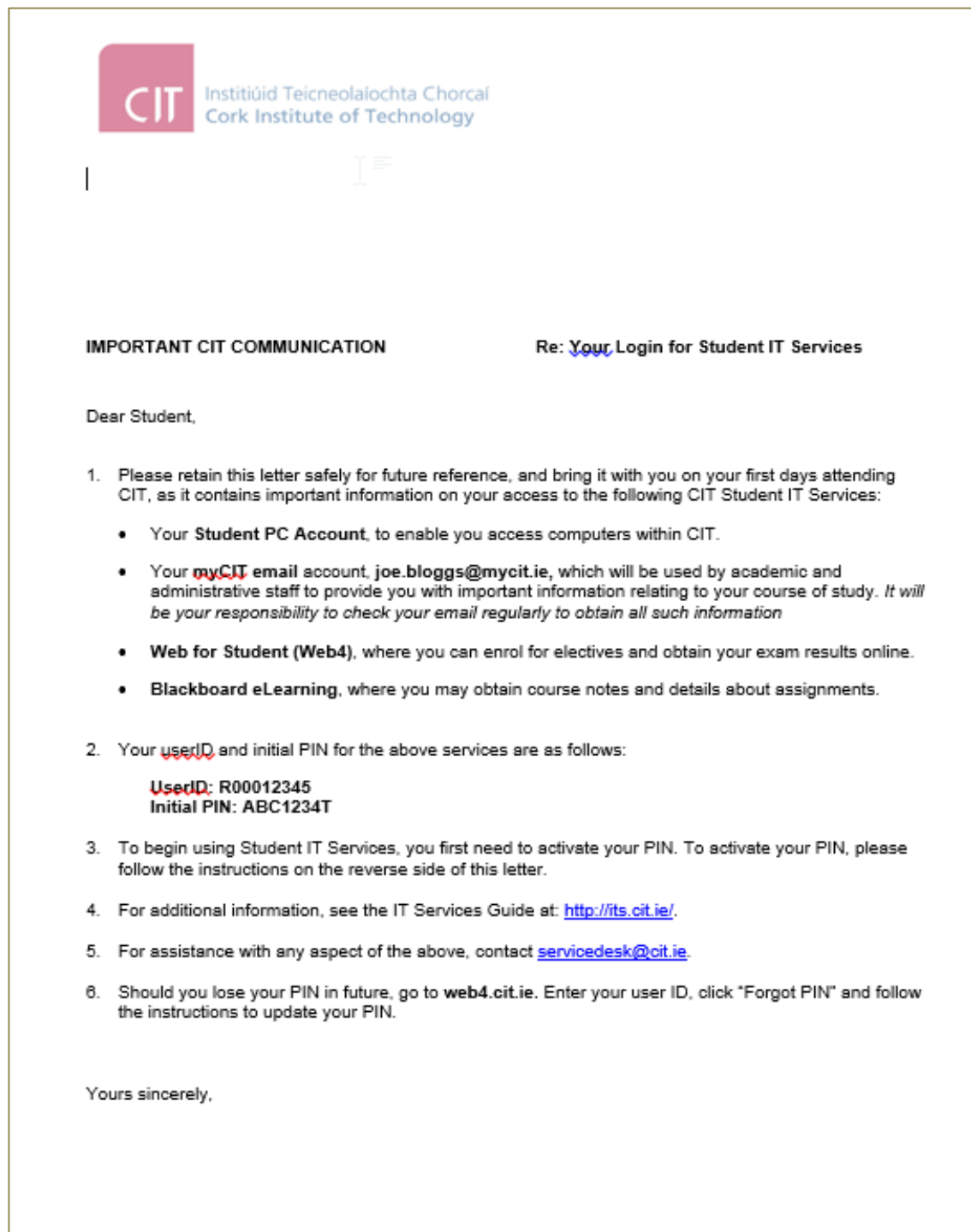
Figure 67: Original Student login Letter from IT Services
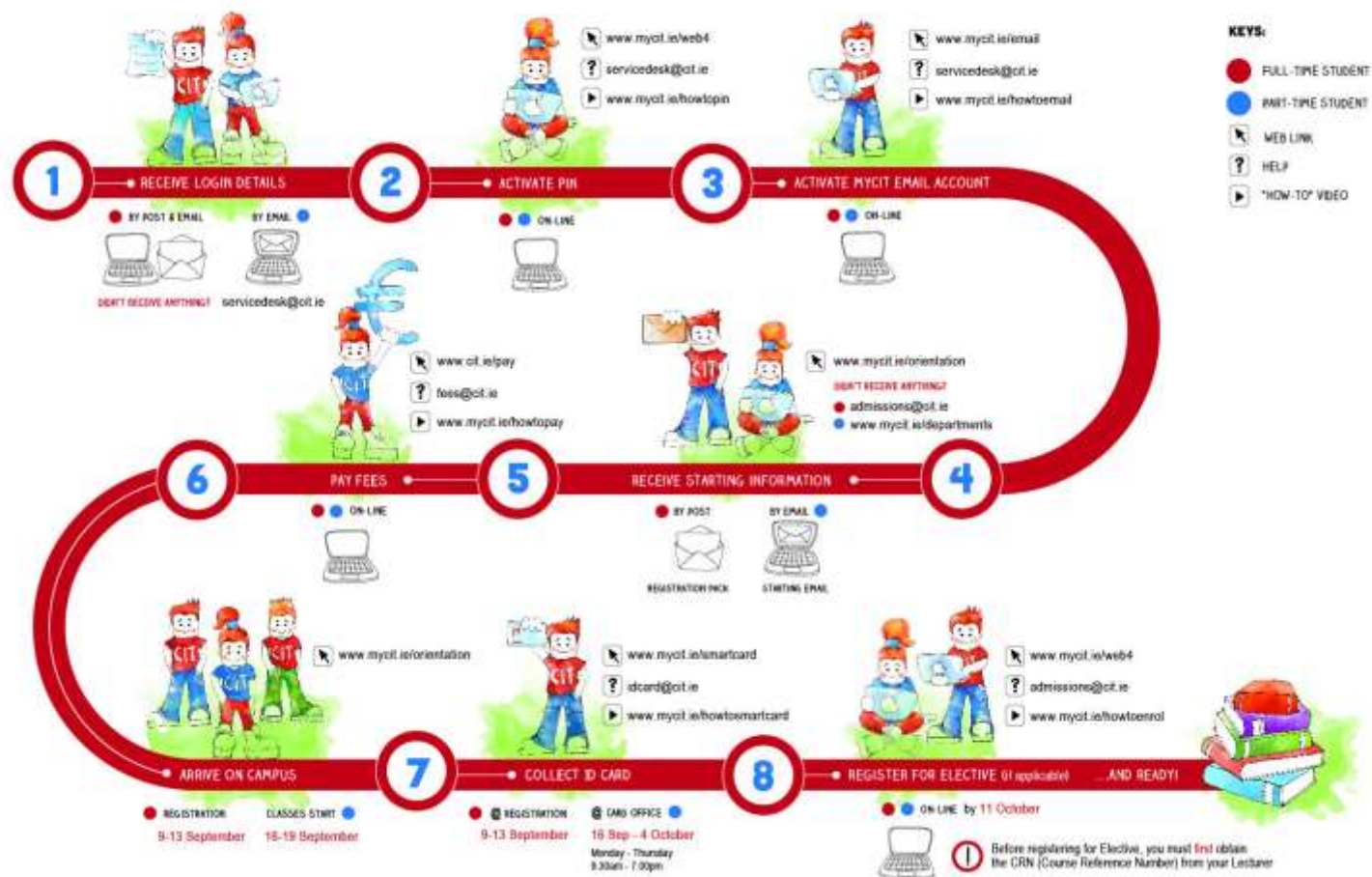
Figure 68: QuickStart Guide

Figure 69: Kick-Off @ CIT, fold-out guide, page 1

Figure 70: Kick-Off @ CIT, fold-out guide, page 2 with new campus map
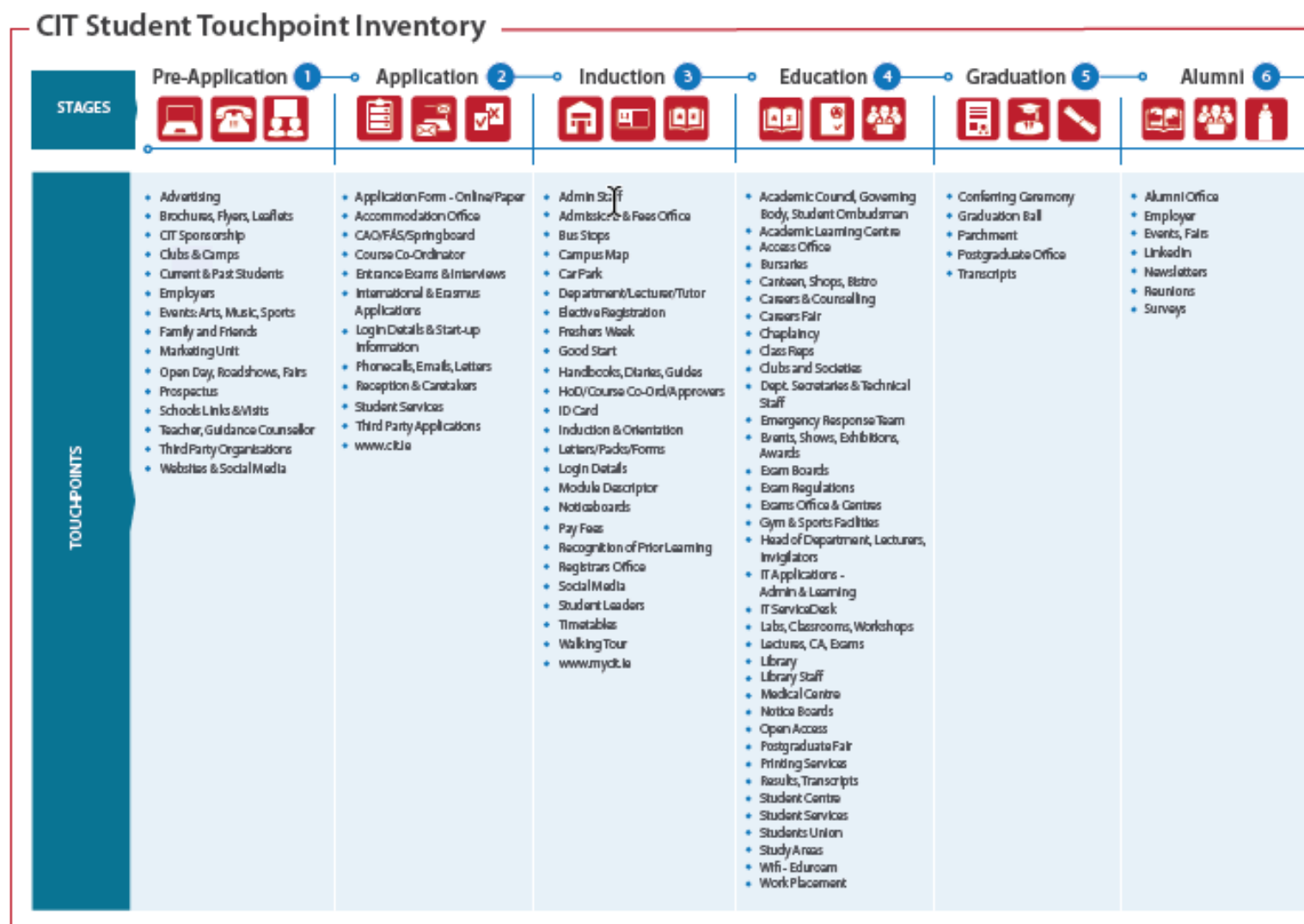
Appendix B | Final Project Report

CIT Student Touchpoint Inventory

STAGES	Pre-Application 1	Application 2	Induction 3	Education 4	Graduation 5	Alumni 6
TOUCHPOINTS	• Advertising • Brochures, Flyers, Leaflets • CIT Sponsorship • Clubs & Camps • Current & Past Students • Employers • Events: Arts, Music, Sports • Family and Friends • Marketing Unit • Open Day, Roadshows, Fairs • Prospectus • Schools Links & Visits • Teacher, Guidance Counsellor • Third Party Organisations • Websites & Social Media	• Application Form - Online/Paper • Accommodation Office • CAO/FÁS/Springboard • Course Co-Ordinator • Entrance Exams & Interviews • International & Erasmus Applications • Login Details & Start-up Information • Phonecalls, Emails, Letters • Reception & Caretakers • Student Services • Third Party Applications • www.cit.ie	• Admin Staff • Admissions & Fees Office • Bus Stops • Campus Map • Car Park • Department/Lecturer/Tutor • Elective Registration • Freshers Week • Good Start • Handbooks, Diaries, Guides • HoD/Course Co-Ord/Approvers • ID Card • Induction & Orientation • Letters/Packs/Forms • Login Details • Module Descriptor • Noticeboards • Pay Fees • Recognition of Prior Learning • Registrars Office • Social Media • Student Leaders • Timetables • Walking Tour • www.mycit.ie	• Academic Council, Governing Body, Student Ombudsman • Academic Learning Centre • Access Office • Bursaries • Canteen, Shops, Bistro • Careers & Counselling • Careers Fair • Chaplaincy • Class Reps • Clubs and Societies • Dept. Secretaries & Technical Staff • Emergency Response Team • Events, Shows, Exhibitions, Awards • Exam Boards • Exam Regulations • Exams Office & Centres • Gym & Sports Facilities • Head of Department, Lecturers, Invigilators • IT Applications - Admin & Learning • IT ServiceDesk • Labs, Classrooms, Workshops • Lectures, CA, Exams • Library • Library Staff • Medical Centre • Notice Boards • Open Access • Postgraduate Fair • Printing Services • Results, Transcripts • Student Centre • Student Services • Students Union • Study Areas • Wifi - Eduroam • Work Placement	• Conferring Ceremony • Graduation Ball • Parchment • Postgraduate Office • Transcripts	• Alumni Office • Employer • Events, Fairs • LinkedIn • Newsletters • Reunions • Surveys

Figure 71: Touchpoint Inventory from Student Lifecycle
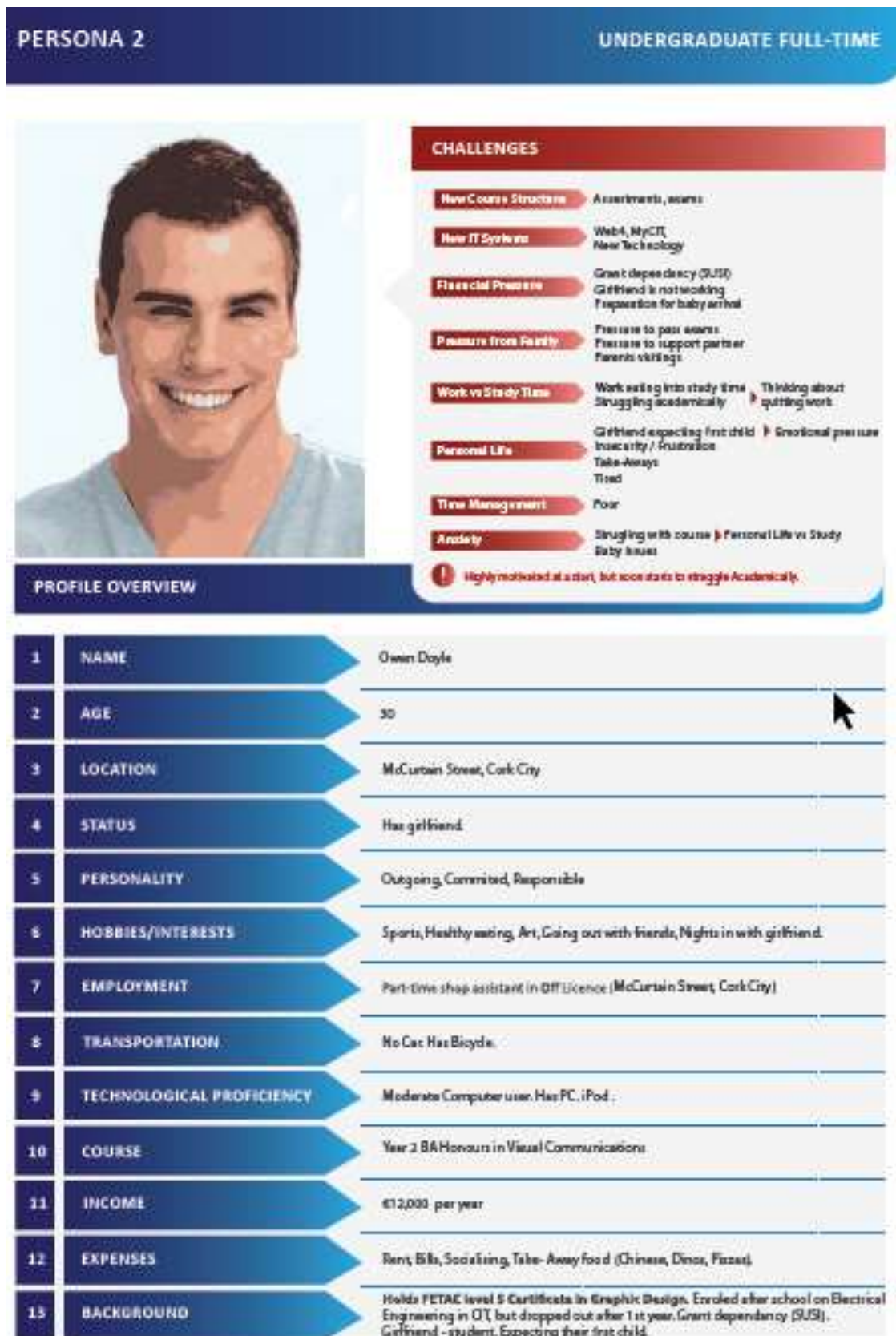
Figure 72: Persona, example one of eight

Figure 73: Persona, example two of eight

Student Type	CAO	Mature	Post-grad	Part-time	Direct Entry (Y1)	Direct Entry (Post Y1)	International	Erasmus	Springboard	SWB	Fás
Service											
Access/Disability	X	X	X		X	X	X	X	X	X	X
Accomodation	X	X	X		X	X	X	X	X	X	X
Admissions	X	X	X	X	X	X	X	X	X	X	X
ALC	X	X	X		X	X	X	X	X	X	X
Canteen	X	X	X	X	X	X	X	X	X	X	X
Careers & Counselling	X	X	X		X	X	X	X	X	X	X
Chaplaincy	X	X	X	X	X	X	X	X	X	X	X
CIT Clubs & Societies	X	X	X		X	X	X	X	X	X	X
Gym	X	X	X		X	X	X	X	X	X	X
IT Servicedesk	X	X	X	X	X	X	X	X	X	X	X
Library	X	X	X	X	X	X	X	X	X	X	X
Medical Centre	X	X	X		X	X	X	X	X	X	X
Printers	X	X	X	X	X	X	X	X	X	X	X
Student Ombudsman	X	X	X	X	X	X	X	X	X	X	X
Students Union	X	X			X	X	X		X	X	X

Figure 74: Student Services Matrix

Query Type	Query Totals	08/09/2014	09/09/2014	10/09/2014	11/09/2014	12/09/2014	16/09/2014	17/09/2014	18/09/2014	19/09/2014	22/09/2014	23/09/2014	24/09/2014	25/09/2014	26/09/2014
		Week 0					**Week 1**				**Week 2**				
Account/Password	82	1			25	5	10	8	2	3	5	3		5	
Admissions	65	1	18	6	18	12	10								
Applications	25	1					15	1			2	2			
CAO	4						1	1	2						
Change of Personal Details i.e. name, address	82	2	3	2	2		6	2	8	2	3	2			5
Cloud Computing	0														
CRN codes	79						20	2	5	3	1	5			
Deferral	20			1	1		2	2	2			2			
Directions	76				12	10			3		3	3	13	6	
Elective Queries	8														
Email	1				1										
Erasmus	2		2												
Exams	3			1	2										
Exemption/RPL	22						1					1			
Fees	215	1	9	7	18	17	25	4	19		2	8	17	22	8
International Students	13	1	1					5	2						
Letters for evidence/proof of attendance	277	12	12	10		5	20	18	29	25	2	3	10	23	28
Login Email	33	1						2	3			3		5	
Mature Students	9		2						2	2		2			
Module Enrolments	80	1	3					3	3	2	5	10		5	
Postgraduate	7		2					2				2			
Printing & Photocopying	1	1													
Progression	5	2	3												
Registration	208	6	6	2	2	4		15	5	16	15	15	8	26	
Software	0														
Springboard	5				3			2							
Stamping Forms	409			16	18	10	8	63	34	29	10	13	57	24	19
Student ID Card (CIT SmartCard)	79	1	6	6	1		5		5	3	5	5	19	3	
Transcripts	38		7	1					3	2	1	1	5	3	
Transfers	83	1	4	1	3		3	15	5		5	2	5	4	5
Web 4 Student	24										3	5	2		
Withdrawal	63	2		2			1		2		2	3		4	5
Day Total		34	78	56	105	63	127	145	134	90	66	87	134	135	65
Week Total				336					496				487		
		Week 0					**Week 1**				**Week 2**				

Figure 75: RIO: Queries captured at the Admissions Office front-desk

Query Type	20/09/2014 Saturday	22/09/2014	23/09/2014	24/09/2014	25/09/2014	26/09/2014	29/09/2014	30/09/2014	01/10/2014	02/10/2014	03/10/2014	06/10/2014	07/10/2014	08/10/2014	09/10/2014	13/10/2014	14/10/2014
		Week 2					Week 3					Week 4					
Account/Password	3	57	45	25	20	5	50	5	7	10	5	21	12	11	10	15	10
Admissions				1			1			2		6		2	2	5	
Applications							1										
Blackboard		3	1	7			1	20	2					1	1		
Card Top-up				14													
Change of Personal Details i.e. name, address																	
Cloud Computing				1		1											
CRN codes							1										
Deferral																	
Email				2	2			15	2				1				
Erasmus																	
Exams																	
International Students																	
Letters for evidence/proof of attendance					1												
Login Email		1	8	6		1		5		2	2						1
Mature Students				3													
Module Enrolments								2					1				1
myCIT								25									
Printing & Photocopying	1	8	25	22	25	18	26	16	27	40	32	105	41	27	22	16	10
Projectors		1															
Registration				2													
Software				2	1	1							1				
Student ID Card (CIT SmartCard)				3	1		7	1					2		5	1	
vDesktop								2									
Web 4 Student							3	7			7		1	1			
WIFI	1	55	30	33	37	20	47	26	12	28	12	30	12	25	22	12	20
Withdrawal		4															
Day Totals:	5	129	109	121	87	46	136	125	50	89	52	167	67	66	61	51	40
Week Totals				492					452					361			

Figure 76: RIO, Queries captured at the IT Servicedesk for the first three weeks of term

Walking Tour		
PLUS	**MINUS**	**INTERESTING**
SL talking loudly so whole group could hear	students follow on like ducks - sometimes very little interaction between students	Freshers week stalls should be on campus during reg week. Festival atmosphere needs to be promoted e.g. bands in the middle of the circle
gives students a chance to chat	SL's didn't get students talking more	involve clubs & societies in overall tours
saw all important parts of campus	SL's still didn't know enough about services when asked	interesting talking points should be incorporated into tour e.g. juggling society practicing in one location, music being played (busker), interesting piece of sculpture
some SL's very good at tour giving	students gettign "dinner" for break - SL had to wait	more tours on later dates would be great
good size small groups. SL's could engage easily with their group	some SL's not talking to entire group but 3 or 4 at the front	every area to submit key information they want SL to give
it was better that students didn't get talks on tours this year	sports facilities not included	elements of fun could be introduced into tour. It is a bit boring
some SL's were very clear & distinct with what they were saying	inconsistent information	for break it would be good if something more formal was happening
weather made a huge difference to tour	some groups were too big so couldn't hear what SL was saying	What about baseball style vendors walking around selling snacks and drinks?
weather helped in that students saw campus at its best	Info given was sometimes not accurate & not what was given to SL's	learn from this year and move forward
good opportunity for studnets to get a geographical bearing	should tours enter specific services e.g. chapel - was an option given not to do this?	Leaders must take charge of the tour
worked well this year, better to keep tour moving rather than input from services	some services felt that SL's did not do justice to the service being explained	Can we do it differently? Could we discuss this? For example, what about a "virtual tour"?

Figure 77: RIO Feedback using De Bono's PMI tool, example one

Day 1 - 15th September 2014		
PLUS	**MINUS**	**INTERESTING**
Temporary signs in IT Building for lecture theatres was a good idea - should be made permanent	New & Returning Students brought large traffic to IT ServiceDesk re WIFI even after IT talk	All Staff at front-line for Day 1 - try and get all the issues resolved quickly
Just Ask desks to help Freshers	Students registered incorrectly - no email	Could we stagger the days students start back?
Welcoming presence by all for returning students - bunting, banners etc;	the canteen open when it was disgraceful looking & bits of rubble falling from the ceiling while students were eating	maybe produce better map of internal campus (departments) for next year + signage
Good atmosphere/buzz around campus	1st yr students not having enough accurate info from the departments of where they were supposed to go	SL's to assist various offices on Day 1
Good Start Presence	Congestion on the main corridor (particularly outside An Siopa). do the doors have to be closed?	more communication rom the depts regarding timetables/department changes
Registration in NMCI went smoothly	Students who did Autumn repeats or Summer work placement didn't realise that it could be another 2 weeks before they would be up on the system. (they had been emailed explaining that)	Have all 1st yrs in on Day 1 but stagger the other years? Could this be a possibility?
SL's still around to help	huge crowds on campus -> focul point. Seemed lost. (let out of traps)	Just Ask! Good Start - Presence - together with SL's - provide a first stop for lost students -> ongoing induction/safety net.
Just Ask desks recognised by studnets	lack of SL's in NMCI	Proposal: Good to have SL's around to help people find their way.
Just Ask IT - major Q's/stds lost re email. Have this now.	Lecturers - very few communicated start class. Year before list was sent to postroom & caretakers	Need to have floating SL's on campus to pick up lost souls

Figure 78: RIO Feedback using De Bono's PMI tool, example two

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Summary of Registration & Orientation 2014
7/10/2014

Feedback was gathered through: |

- interviews with all stakeholders
- brief discussion with student leaders
- feedback workshop with staff involved
- collection of front-line queries by Just Ask! Admissions & ServiceDesk
- general observation of the process

Communication

- Good communication for R&O but planning should start earlier in the year
- Internal communication around the processes that support R&O needs to be improved
- Clarification around the terms and role of the following: Good Start, Registration, Induction, Orientation – we need one consistent message for both staff and students

Student Leaders

- Student leaders are an important asset that provide a warm welcome for students
- Review process of recruitment, training and organisation of Student Leaders (separate project from RIO)
- separate training days for Student Leaders for specific task/event
- mix of quality of Student Leaders and giving inaccurate information

Process fail-points

- Manual paper shuffling
- Manual data entry
  - Students not up on Banner when they arrive for R&O
  - Dirty Data - training is required for all "services" staff around the flow of data through systems and the effect of missing or dirty data
- Internal miscommunication
- Timetables, room numbers

Information, - Talks, Walking Tour, Publications & Websites

- Department Talks – inconsistency, timing and message
- Too much information given during R&O, hold back until week 1 e.g. IT Talk –> 'Just Ask IT'
- An "Open Door Welcome" for families of students is something that CIT should consider
- Review & streamline publications & "packs"
  - QuickStart, Kick-Off @ CIT, Student Services handbook, IT Services handbook, Registration Pack
  - Avoid duplication and assign clear ownership
- Information going up on website and being given to students too late
- Walking Tour could be more interactive but kept moving
- Timing and a food break needs to be considered

Registration Day(s)

- One Registration & Orientation process required for all students. There is doubling up of effort e.g. walking tours, IT Talks - Mature, Erasmus etc. Each office/department should have their own separate department session with their group but one inclusive Orientation.
- One organiser/co-ordinator for the whole process with clear responsibilities
- "Induction" continues into Week 1,2,3.... Is there an opportunity to move around elements of the existing process and spread out the information we provide to students over a number of weeks exploring a number of delivery methods.
- NMCI R&O should not be run on day 1 of semester 1
- Are there two parts to the Registration & Orientation process?
  - Must-do – registration, forms, ID cards, department talks
  - Optional – Just Ask! SU, BoI, Student Services Expo(?), music, fun, stalls etc.
- Registration Step 2
  - Some student groups need more time allocated for R&O e.g. non-EU, Garda Vetting
  - Opportunity to move step online
- No. of stations/booths - the process was greatly improved in 2014 with extra stations for ID Cards and Document Checking
- Flow & layout needs review
- Location of Just Ask! Bank of Ireland and SU stands
  - Just Ask! stand is a good initiative
  - Bank of Ireland should not get a prominent position at Nexus – aggressive & pushy
- Visuals & atmosphere:
  - Hoodies, Good Start bunting & banners all add to a good impression for new students

Day 1 - 15th September

- Day 1 of Semester should have extra desks/staff available to deal with the influx of queries and get students up-and-running as quickly as possible. This includes Student Leaders being available to help with queries.
- Timetables not available which caused confusion
- Should the return of students be staggered during this week?

General

- Signage
  - Signage is poor – both temporary and permanent
  - IT Building, Admin Building – Admissions & Fees Area,
  - Directions to classrooms A,B,C,D block
  - Map or guide to room numbers and internal layout is required
  - Directions from Car parks, bus stops etc.
- Backup Plan required
  - In the event of an emergency/incident e.g. power cut!
  - Weather restrictions

Figure 79: RIO: summary report of key findings sent to the Governance Group
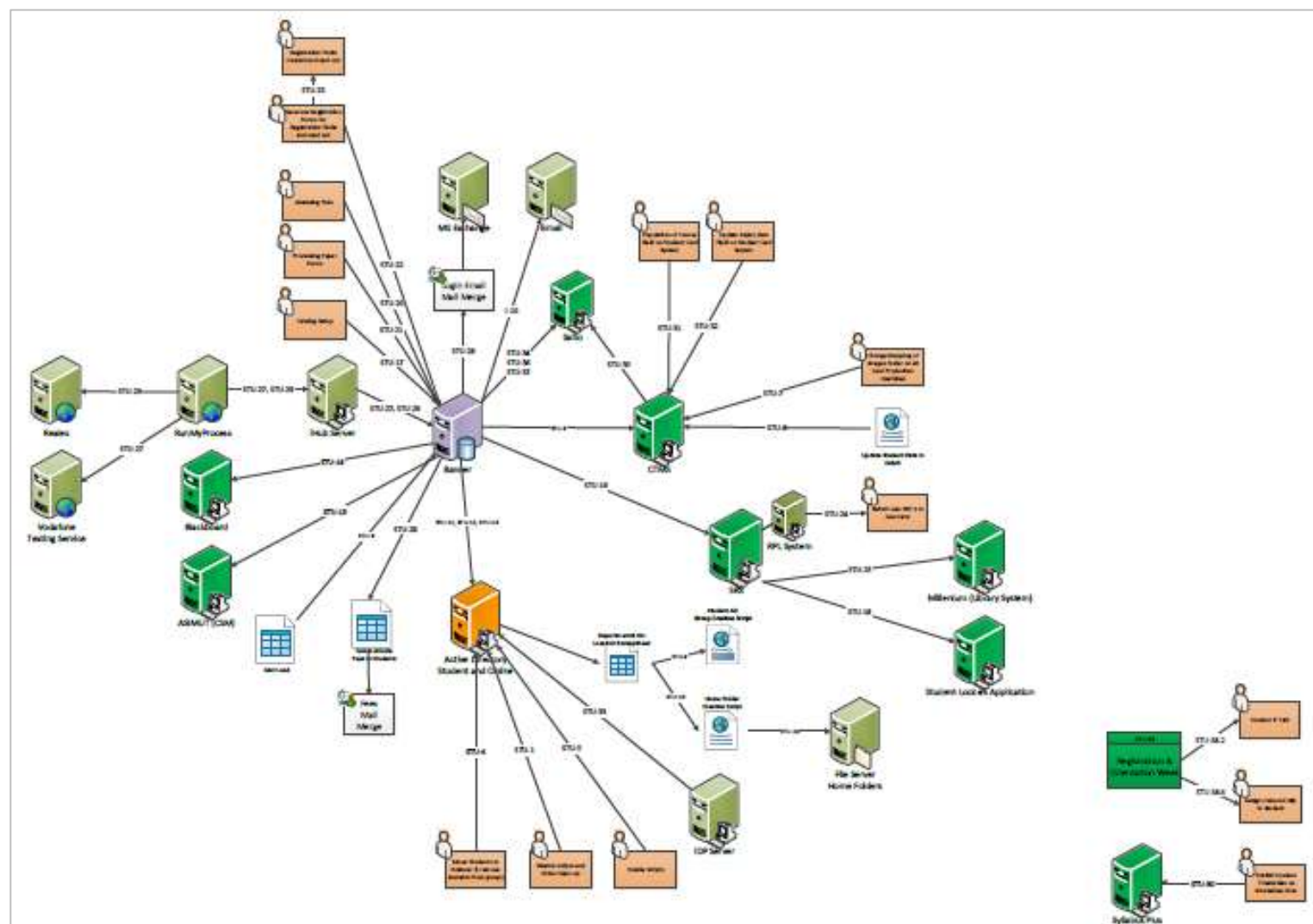
Figure 80: Magnifeye Layer 1, map of data flowing between systems

Figure 81: Magnifeye guide for updating documentation (for demonstration purposes)

1 Pre-September 2015 MAGNIFEYE

Quick Wins Implemented for September 2015

Complete
- Programme structure and module changes finalised by June
- Simple Operational Reporting for all support staff
- Live Banner Updates
- Setup of IT Induction Group - 6 meetings from 1/7/2015 - 31/8/201
- Bank file script to update overall student status in Banner
- CAMS Script Changes
  - Changing Date Activation from 31st Aug to Term
  - Remove requirement for SZRCARD table
  - Modification of BannerPassword Sync
- Nightly Banner to Blackboard scheduled to run twice daily for 2015
- September War Room
- Change Control Procedure to be updated

Not Complete
- Training Session for Support Staff (Training provided to invigilators instead)
- Process required for verifying student personal details as per formal identification
- Registration evening for part-time students
- Login email -> troubleshoot & fix issues with SPAM/Junk
- Signage in IT Building in particular lecture theatres

Statistics

FreshDesk Student calls (via email) for September:
  2014: 645
  2015: 513 (9% reduction)

Programme & Module changes
  2014:
  - 17 program changes
  - 25 modules changes
  2015:
  - 21 programs changes
  - volume of module changes is down

Just Ask IT Week 1 Semester 1
  4 hours on 4 consecutive days
  2014:
  2015: 70 students attended

2 September 2015 War Room Summary

Plus

Good planning:
- IT Induction Group
- Nexus Layout was better and Nexus setup was done in plenty of time
Banner Live Updating led to:
- less issues and less queues
- remote campus test run was invaluable
IT Helpdesk on corridor post IT induction
- able to get a lot of students setup in advance of Week 1 and resolve login, password, wifi issues
BI Reports
- very useful and easy to use
Just Ask IT t-shirts
- gave IT Services an identity
War Room
- brought everyone together to try and solve issues immediately
Student Leaders
- competent and well-prepared

Minus

Paper forms are still causing many issues:
- delays in photocopying forms and passports
- wrong DoB's are entered into Banner e.g. American format
Login Email created calls to Servicedesk
- 800 emails sent too soon & SPAM/Junk issue not resolved, formatting issue with passwords that had a zero at start, incorrect personal emails in Banner due to manual data entry
Banner - Issues with Java Versions and 3 minute Banner outage occurred twice during registration week
Card Office was not open on Week1, Day 1 until 2pm, there was no technical staff member in the Card Office for September which lead to more callers at Servicedesk
IT Services staff spend a lot of time fixing issues in other areas that should be more innovative with regard to fixing problems
Queues at other Registration desks created stress and work for everyone i.e. International students and Garda Vetting
CIT Smart Card and Card System
- No policy exists in relation to forms of ID accepted
- There is a delay in printing cards at registration while waiting for Banner to CAMS script to run
- Too much manual intervention currently required by staff with not enough technical know-how
Network Port and connectivity issues
- in both CCAD and CSM on registration day but were resolved on time. Needs setup day before.
Still using an excel sheet to manually track whether students "show" or "don't show" up to registration - this then has to manually updated in Banner later.
Over reliance on individual people: no contingency if someone is out sick

Interesting

Just Ask IT sessions - small numbers of students turned up
It is too much pressure to go from NMCI back up to Bishopstown on the same day and setup everything again.
Day 1 Week 1 was a peak day for WIFI usage; needs monitoring for 2016
- WIFI instructions created by Student Interns were really helpful - need modification for 2016
Banner refresher training for all Admissions & IT Services staff pre-September - would eliminate issues such as no block code assigned to a student record
Lots of students looking for directions during Week 1 - some sort of interactive mobile application to direct students to their classroom would be useful
Calendar of events made available to everyone especially Servicedesk including:
- emails sent to students for repeat exam enrolments, elective enrolment, etc
Fees: previous college information. Upload this previous college information from the CAO Load
Setup Wireless helpdesks in remote campuses for 2016

Figure 82: Magnifeye September 2015 Report, part one of two

3

September 2016
What do we need?

IT

Online Applications for other student cohorts

Online Registration for new CAO students

Online "updating of personal details" for all students

Login Emails – improvement or automation

CAO Load - include "previous college" field and load into Banner with other CAO data

Card System Development -> short term and long term plan required

Pop-up IT Helpdesks at various locations for Week 0 and Week 1 2016. Could these replace the Just Ask IT workshops? (Cabin in the West Atrium?)

FreshDesk - capture of all student queries we are handling – in person, phone & email

Communication

- Need overall Project Manager for Registration, Induction and Orientation and IT co-ordinator for all IT related activities including card printing

- Better consultation with and involvement of remote campuses and faculties in advance of Registration

- Clear plan and consistency in registering each group of students: International, Erasmus, Springboard, Post Year 1

- IT Services branding needs more thought, full-time wearing of corporate clothing

Student Experience

- Registration for all new students including part-time

- Eliminate queues and use Student Leaders across all services to help during Week 1

- All students should receive the same experience for registration and induction regardless of their nationality or student type

- Could we stagger the return of students in Week 1, first years back on Monday, everyone else back on Tuesday

Processes & Procedures

- Policy to deal with ID Cards and issuing of the same for all student types (Legal Name, forms of ID accepted)

- Reduce program and module changes for September 2016

Card Office and Card System

- Card System, card production and issuing of ID cards is managed by IT services with technical staff troubleshooting common issues and queries

- Card printers and production facilities in remote campuses

Planning and Organisation for September

- Open Access ready for end of August

- Website content and IT Services handbook updated for mid-August

- Network Setup - plans, layout, equipment needs to be recorded as a process in MAGNIFEYE. Remote campuses to organise and test their own setup the day before.

People and Training

- Banner Live Updating (if necessary for 2016) to be done by Student Leaders or IT savvy invigilators

For Registration, staff in key areas should be experienced in handling large volumes of students and all types of queries e.g. International Office and Garda Vetting

Medium/Long term actions with dependency on Banner Revitilisation project

- Remove all paper forms

- Self-service for all students including Online Application, Registration & updating personal details

- Elective registration for Continuing Students -> Trial for one department done at the end of semester 2 for following years electives

- Banner data entry -> Automatic data validation and mandatory fields with no manual data entry into back-end Banner

- Enterprise Service Bus Pilot Project - development of Event Triggers with automatic updating of other systems.

- Banner Password Management: managing of student password moved to AD – would require re-design of process and data flows. Address security around PINS database

Figure 83: Magnifeye September 2015 Report, Part two of two

Figure 84: Part of the Service Design Master Class participant pack which contained an outline of the day and biographies of speakers

SERVICE DESIGN MASTER CLASS

Tuesday March 10th 2015
08:30 to 17:00
CIT Wandesford Quay Gallery, Cork

A one-day hands-on event that will provide participants with some tools to understand their current "customer" journeys and redesign those customer experiences in order to deliver a positive outcome every time.

Here is an outline of the day but this is subject to change:

TIME	OUTLINE
8:30 – 9:00	Registration & tea/coffee
9:00 – 9:45	Purpose of Event, ID2015 etc; Introduction to Service Design Experts Overview of the key concepts in Service Design Stages of Service Design: Discover, Define, Develop, Deliver
9:45 – 10:15	Warm-up Challenge
10:15 – 10:30	**Tea Break**
10:30 – 10:45	Introduction to Design Challenge
10:45 – 12:45	**Tool: Framing: Research Questions** Define the issue to be addressed (20 mins) Meeting users on the street (60 mins) **Tool: Service Concept: User Journeys** Mapping the current service (40 mins)
12:45 – 13:15	Service Design Case Studies from our mentors; How Service Design tools are being used in the real world
13:15 – 14:00	**Lunch**
14:00 – 16:00	**Tool: Ideation: Lotus Blossom** Solution generation: brainstorming ideas (40 mins) **Tool: Ideation: Idea Selection** Solution evaluation: Determining which solution generated has the highest potential for impact (40 mins) **Tool: Service Concept: User Journeys** Defining the solution: Remapping the new solution to highlight areas of significant change (40 mins)
16:00 – 16:45	Present feedback to other groups
16:45 – 17:00	Closing Thoughts & Next Steps Feedback

SERVICE DESIGN MASTER CLASS

SERVICE DESIGN MENTORS

Dr. Linzi Ryan

Dr. Linzi Ryan is a post-doctoral researcher for the Centre for Design Innovation, IT Sligo. She is currently principle researcher in the Designing Services for Alzheimer's (DSA) project within the INTERREG SPIDER project. She has a PhD in Product and Service Development, a Masters in Product Manufacture and Innovation; and an honours degree in Industrial Design.

Tanja Enninga

Tanja Enninga, MSc is senior researcher and PhD candidate at Utrecht University of Applied Sciences. Her research focuses on the human side of innovation. Her Ph.D. topic is about how innovation project leaders could learn vicariously from the experiences of others via narratives. In addition to her work at the University she is management consultant at Red Queen and member of a supervisory board of a health care organisation. Tanja received a Master's degree in Marketing from the University of Glamorgan, UK.

Sorcha Holohan

Sorcha Holohan has worked as a designer and design educator for twenty five years. Sorcha's industry and education experience has moved from a career as head designer and range co-ordinator for leading knitwear companies, to designing and running her own successful luxury brand for both home and export markets.

Currently, design education is Sorcha's key focus. Sorcha's doctoral research centres on Design Thinking and in particular it's development within the domain of business information systems at University College Cork. While education has always been a clear, strong focus, Sorcha has since 1999, maintained essential, long-established links with design in and for industry practice through her position as a Director of H+A Marketing and PR Agency, Cork/Galway/Dublin/Limerick

Heather Madden

Heather Madden is a Business Analyst at Cork Institute of Technology and plays a key role in aligning business processes with people & technology. A keen interest in process improvement using a Service Design approach has allowed her to emphasise the importance of the end user experience. She is currently a PhD candidate at Cardiff Metropolitan University.

SERVICE DESIGN MASTER CLASS

SERVICE DESIGN MENTORS

Ann Davidson

Ann Davidson trained and practised as a lawyer in Edinburgh before going back to University to study for an MBA. On its completion, she spent 12 years with the Institute of Chartered Accountants developing and running its professional development programme and involved in a number of its European and World Bank funded projects. A return to University to study for another masters, saw her join the Scottish Institute for Enterprise, as its Enterprise Programme Director. There she was responsible for developing its core programme of flagship events including its annual bootcamps. She also developed its " Innovation and Enterprise Programme', which delivers over 120 curriculum based workshops to Scottish HEI and FE. Her main areas of interest are design thinking and innovation, with a particular focus on developing the mindset and confidence to be innovative and take ownership of ideas.

Dr. Andrew Pope

Dr. Andrew Pope is a lecturer and researcher in the Accounting, Finance and Information Systems Department at University College Cork. Andrew is the Co-Director of the MSc in Electronic Business at UCC and a Director of the Centre for Security and Emergency Mangement. He blogs about service design at servicedisrupted.com

Catherine Murphy

Catherine Murphy is a lecturer in Information Systems and placement co-coordinator in Cork Institute of Technology. Her Masters research examined Service Design in Financial Services. She has been involved in mapping the Student Experience in CIT.

David Roberts

David is an Industrial Designer and graduated from NCAD in 1981. In 1989 he moved to Sligo to prepare and initiate the ID Program at IT Sligo. David has interests in designs that will make climate change more bearable and in particular for Urban Cropping. Experienced at fabricated design for Point of Purchase.

SERVICE DESIGN MASTER CLASS

SERVICE DESIGN LUNCH-TIME SPEAKERS

Dr. Simon O'Rafferty

Dr. Simon O'Rafferty - B.Des (Industrial Design), MSc (Sustainable Development), PhD (Sustainable Design Policy)

Simon is a design researcher and social design practitioner. In 2014 he returned home to Ireland after almost ten years living and working in the UK where he was senior researcher at the Ecodesign Centre and co-director of social design agency Ark Lab.

Simon has acted as an advisor to governments, industry, third sector organisations and universities on design for sustainability and social innovation.

He has recently started a post-doctoral research fellowship on designing policies for sustainable behaviour change (www.openpractices.net) and is co-developing a new social innovation project called Voidstarter (www.voidstarter.com). This project is aiming to use empty housing as temporary training and learning spaces for unemployed young people and was one of three winners of the 2014 EU Social Innovation Competition.

Simon has published widely on design, design policy and sustainability. He is an expert evaluator for the European Commission's Horizon 2020 Programme and has been an invited speaker on emerging design practice by organisations such as the BBC, British Council and UK Technology Strategy board.

Mark Brennan

Mark Brennan heads up Digital Marketing & Innovation at AIB, transforming how the financial sector use digital communications to best serve customers by delivering world class digital for the AIB & EBS brands. Mark has previously worked in Tribal DDB London, one of the largest and most award-winning digital agencies in the world. During his time with them, Mark worked on some of the most innovative, effective campaigns for global clients including Guinness, Volkswagen and Captain Morgan. In 2012 Mark established the Dublin arm of Tribal DDB which in a short space of time developed work for O2 Ireland and digitalising the Guinness Storehouse in Dublin.

Event invite

A one-day hands-on event that will provide participants with the tools to understand their current "customer" journeys and redesign those customer experiences in order to deliver a positive outcome every time.

Service Design can help organisations and individuals in the public and private sectors to innovate and grow. During this one-day master class, we will introduce you to the concepts and tools of design thinking which will help you to create more meaningful products and services for your users.

It is a hands-on workshop where participants will be given an existing challenge to work though using a number of Service Design tools. Service Design Experts will provide mentoring and guidance on the day.

Who should attend?

- Do you think there might be a better way to do things in your organisation but unsure where to start?
- Would you like to learn to use some tools and techniques to improve the services you deliver?

What will I learn?

- To use a user-centred holistic approach to improve and innovate services or products
- To use a design-led approach to solve business problems and create value
- You will take away an introduction to Service Design as a tool to help you in your daily projects
- To help you to see and hear outside your usual ways of thinking

Places are limited and registration is required. We have a number of complementary tickets and we would like to offer you one. Please register here.

Figure 85: Service Design Master Class Event Invite

PRESS RELEASE

CIT HOSTS SERVICE DESIGNERS MEET UP

Cork Institute of Technology is hosting a Service Designers Cork Meet Up on **WednesdayApril 15th** at CIT Bishopstown campus. In the first Service Design Masterclass held in CIT during Innovation Week, it was demonstrated how service design tools can help organisations to understand their customer's experience enabling them to design better services for them.

Think about two coffee shops, both selling coffee at the same price: why do customers choose one over the other? The Service Design Challenge for the Masterclass was to redesign the service of takeaway coffee. Participants observed coffee drinkers in Cork City and concluded that from Americanos to Cappuccinos to Flat whites, coffee drinkers are discerning about their coffees.

It is not just the type of coffee that concerns customers, what matters to them is the kind of cup, the type of bean, the smell of the coffee, the greeting and general 'banter' with the staff, the lid for the cup, right down to the coca dusted shape on the top. Participants then used Service Design Tools to gain insights into the consumer's experience and to explore new ideas for meeting the needs of coffee drinkers.

It's not just about coffee shops though, organisations such as VMWare, EMC, Marymount Hospice and startups GroupBooked, SUPP and Ark Platform are interested in learning about Service Design techniques. If you are interested in learning more about Service Design Tools, CIT will host a Service Designers Cork Meet Up on Wednesday, April 15th at 6pm on the CIT Bishopstown campus. You can find more details on http://www.cit.ie/servicedesigncork

ENDS

For further Press Information: Please contact ███████ on ██████ or ████████████
email ████████

Figure 86: Service Design Master Class Press Release post-event
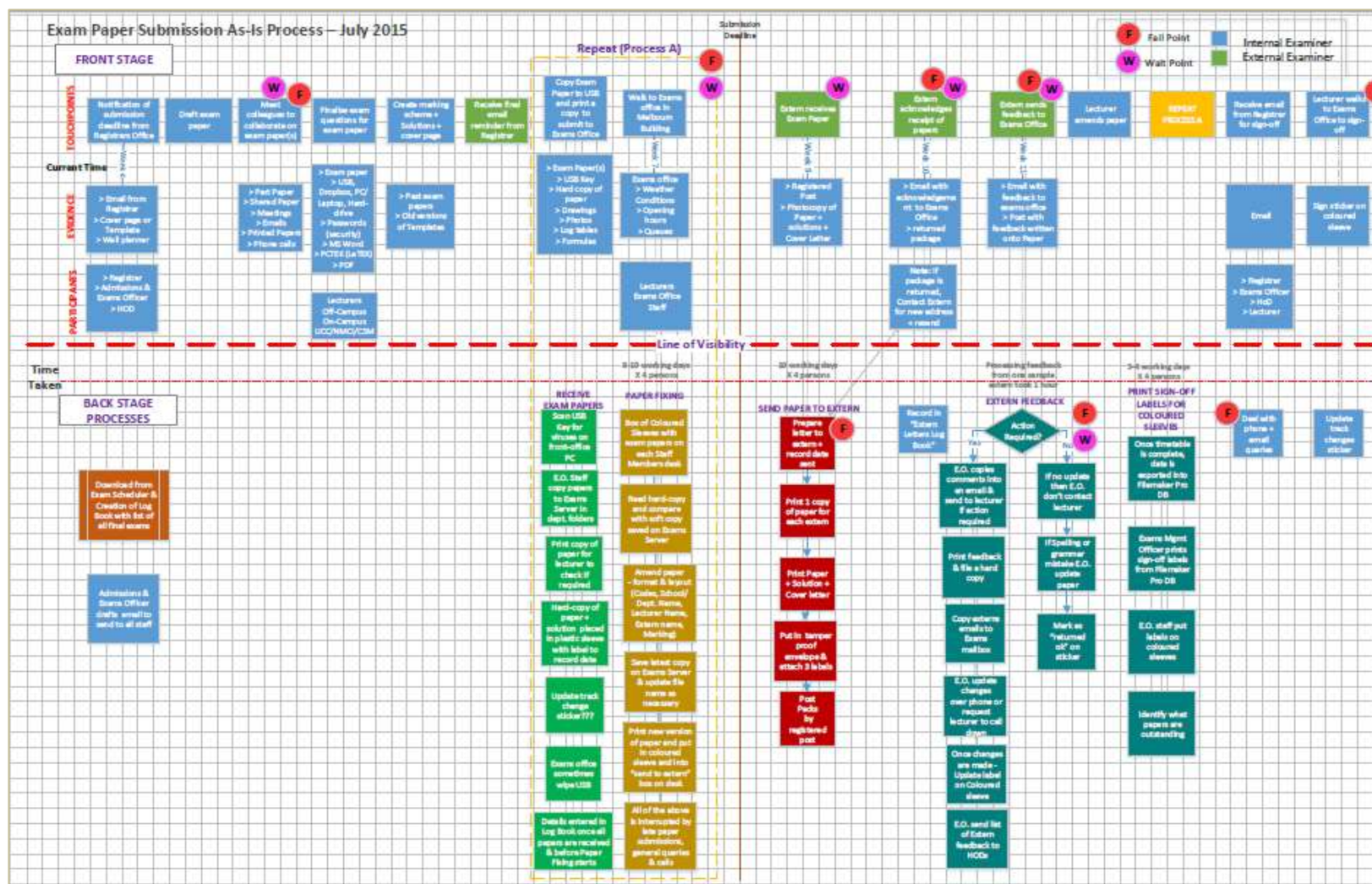
Figure 87: Exam Paper Submission process as-is *Service Blueprint*
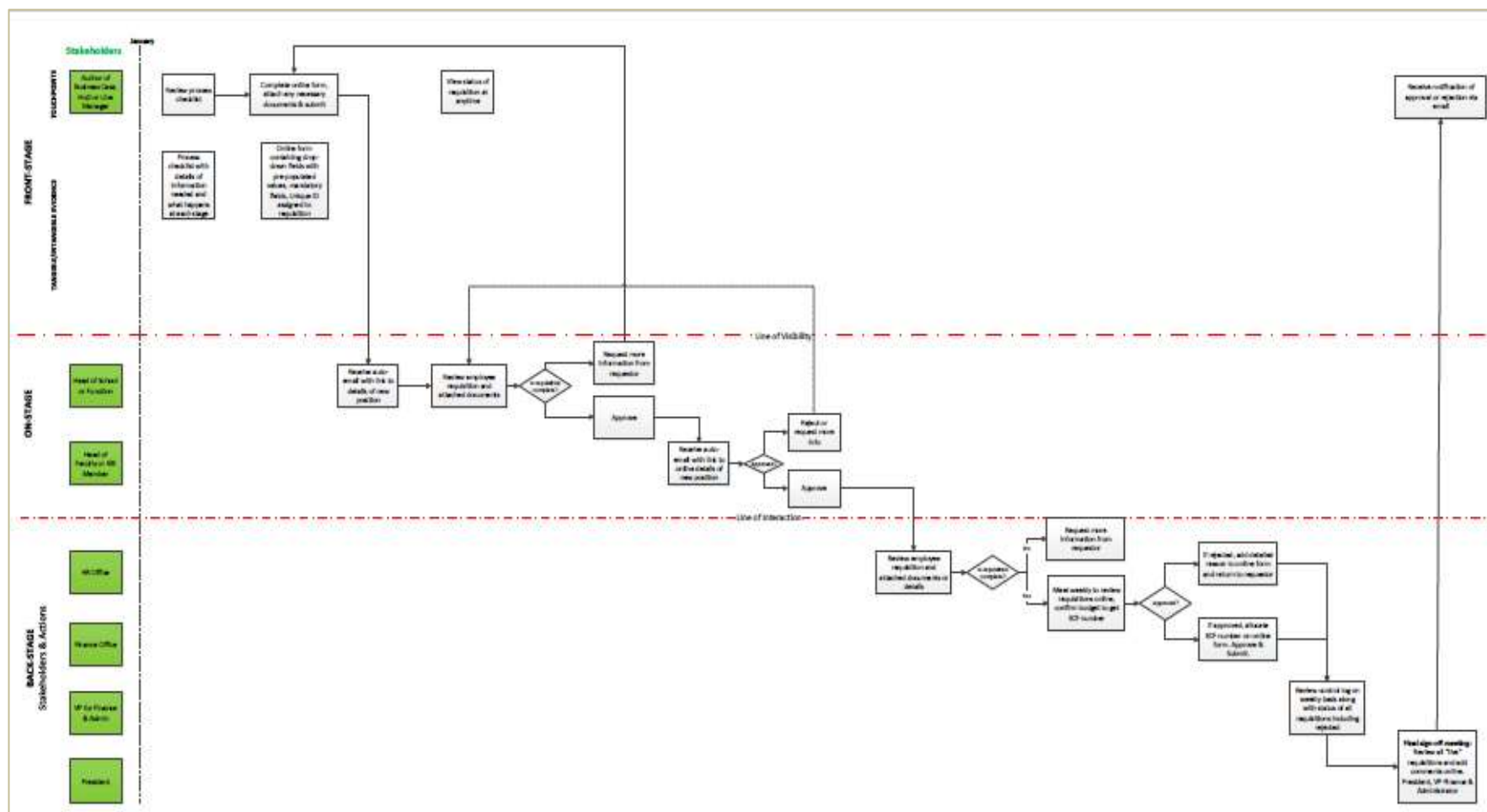
Figure 88: *Service Blueprint* **of the to-be HR Recruitment Approval Process**

Appendix C | List of Professional Development Activities

Date	Type	Event
06/11/2013	Conference	HEAnet National Conference, Sheraton Hotel, Athlone, Ireland
20/11/2013	Conference	Service Design Network Conference, Cardiff, Wales
11/12/2013	Seminar	Stanford dSchool "Creating Innovators through Design Thinking" with Justin Ferrell, CIT, Cork, Ireland
09/04/2014	Conference	ServDes2014, Lancaster University, U.K.
20/10/2014	Training	Design Thinking Master Class, UCD Innovators, Dublin, Ireland
03/11/2014	Training	Lancaster Co-Design FaceMooc five week online course
06/11/2014	Seminar	Winning by Design, Logitech, Cork , Ireland
09/12/2014	Seminar	Campus Engage Participate Programme, City Hall, Cork, Ireland
20/01/2015	Seminar	Ryanair Transformation Journey, MII Event., Clarion Hotel, Cork, Ireland
29/01/2015	Conference	SPIDER Public Sector Service Design Conference, Cardiff, Wales
10/03/2015	Networking	Irish Design 2015 launch event, Cork, Ireland
15/04/2015	Networking	Service Design Meet-up, Cork, Ireland
20/04/2015	Conference	Ireland International Conference on Education (IICE-2015), Dublin, Ireland
01/05/2015	Journal	International Journal for Cross-Disciplinary Subjects in Education (IJCDSE), Issue Volume 6, Issue 4
08/06/2015	Conference	SPIDER Public Sector Conference, Dublin Castle, Ireland
01/06/2015	Networking	Membership of Institute of Designers in Ireland
27/08/2015	Seminar	Design Thinking, Idea Feasibility and Innovation Practice, Clarion Hotel, Cork, Ireland
01/11/2015	Journal	Iterations Journal Paper: Moving towards user-centred services in the public sector, Iterations, Design Research & Practice Review
01/06/2016	Journal	Swedish Design Research Journal: Using an Action Research Approach to Embed Service Design in a Higher Education Institution
01/06/2016	Networking	Setup of a Design Thinking Group in CIT, Cork, Ireland
08/06/2016	Conference	Presentation at Ellucian World Tour: Designing Better Services, Dublin, Ireland
1/11/2016	Conference	Lean Higher Education Conference, Stirling, Scotland

Table 19: List of professional development activities

Appendix D | Publications

Transforming Student Services in Higher Education

Heather Madden

heather.madden@cit.ie

Cork Institute of Technology, Cork, Ireland

Abstract

At Cork Institute of Technology (CIT), there are many disparate actors, systems and processes involved in service delivery and too often employees work in silos with little or no understanding of the personal impact of the student journey. Traditionally in large organisations, the focus is often on the technology implementation while ignoring the importance of people and processes.

As part of CIT's plan to transform and streamline services for students in a higher education institution, a pilot project was initiated to re-design some key business processes within the student lifecycle. The design of services is well-documented; however there is a lack of research in regard to an inside-out service design approach used to transform the student experience in higher education. CIT have discovered that focusing on the on-stage and back-stage functions of the employee experience is just as important as the student experience in order to deliver great services.

KEYWORDS: transform, higher education, student services

Introduction

CIT is a publicly funded higher education provider. It is the largest of Ireland's network of thirteen Institutes of Technology and currently has in the region of 15,000 registered students with approximately 2,000 new entries year on year. CIT's education, research and training provision spans a wide variety of disciplines, from business and humanities through engineering and science to music, drama, art & design.

In 2011, Senior Management at CIT requested a review of current IT systems and a proposal for integration of the same. The problems that existed included issues with data quality & timely availability, lack of online student self-service, isolated enterprise applications, disconnect between academic business process and the IT solutions needed to support them.

RECAP, Review and Enhancement of CIT's Admissions Processes, was a project initiated in February 2013, and used a service design approach to review a section of the student

1

lifecycle from *offer accepted* to *in class, ready for learning*, and proposed short, medium and long-term changes, the short-term were implemented for September 2013. The analysis initially focused on new part-time students but changes were implemented, where possible, for all student cohorts.

Service design as an approach, where the end-user is the main focus and co-producer of the service, is a relatively new concept to the higher education sector. In the current climate, it is not so much about the product, but how the user interfaces with it that matters. CIT have piloted service design techniques to review the student experience in a higher education institution.

During this recent pilot project, it was realised that the culture and people transformation that needs to be considered when implementing service renovations, is no small task and should not be under-estimated. Employees at the front-line of a service can often be buried under the *paper shuffling* of a process without having any understanding of how their processes interact with other processes throughout an organisation.

RECAP – Review & Enhancement of CIT's Admissions Processes

The RECAP project planned to make some of the services delivered by CIT's Admissions Office more useful, usable, efficient and student-centred. The project was focused on reviewing the student lifecycle from *offer accepted* to *in class, ready for learning* and making improvements where required.

A Project Governance Group was setup to provide top-down support to the project, made up of key members of the senior management team. A project team was created which included front-line and back-office staff, and two student interns were employed for the summer period to work on design and communications. CIT actively sought input from all key stakeholders, including front-line employees and students, as designers and co-producers of the service experience from the end-users' point of view.

An inside-out design approach was used in this project in contrast to a typical approach of using an external consultancy. This could be seen as one of the most important aspects of the project as this is not a once-off project but a new approach to embed design thinking in a higher education institute for the first time in Ireland, as a series of iterative change projects. The employees themselves must become designers if design thinking is to be the future at CIT.

New tools were introduced to stakeholders and were well received and understood. Initial interaction at workshops was slow but improved later during the customer journey mapping and ideation workshops when users became more collaborative and focused on the common goal of a positive student experience. Our innovative approach to break down barriers was, to engage these stakeholders to draw up a service design blueprint, viewed entirely from the end-user perspective. The use of service design techniques—in particular, service blueprinting — can support this service view and aid in innovating and transforming the student experience within higher education (Bitner et al., 2012). The *touchpoints* were analysed and using swim- lanes, all front and back stage operations were identified and the

interoperability of the nature of the service was laid out, perhaps for the first time, in its entirety.

The *Discover and Define* phases of the project identified problems, opportunities and user needs, gathered evidence, brainstormed and conducted interviews with key stakeholders. Mystery shopping was used to assess the existing service as well as observation techniques and student diaries.

For the *Develop and Deliver* phase of the project, an Action Plan was produced, with 17 short and 10 medium to long-term actions. Owners were assigned to each action. Some examples of service improvement included a new campus map, improved signage, extended opening hours for key student services such as the Admissions and Fees offices, start-of-term induction for Heads of Department, a briefing session for department secretaries and a new induction process for part-time students. Student personas were created to help employees *walk through* the new service delivery. How-to videos, which received up to 10,000 hits, were created for all stages of the process and included in a QuickStart Guide for new students.

Culture @ CIT and the Employee Experience

Cultural transformation is a non-linear process and that culture will only change after people's actions are altered, after benefits have been observed for some period of time and after people have seen the connection with the change (Kotter, 1996). It was recognised that some CIT employees did not understand the purpose of the RECAP pilot project and simply did not understand the meaning of the term *process* and their involvement in this process. It is important for employees to understand why the change is happening but also to understand what that change will mean for them. If they understand that the change will ultimately improve the student experience but also impact their day-to-day jobs in a positive way, then they are more likely to embrace the change. Spending time to understand a culture can open up new innovation opportunities (Brown, 2009).

Process streamlines workflow so a team can be more effective. When clear and defined processes are in place everyone feels better and more confident in their work. The analogy of a *cog in a wheel* can be used to describe a person or thing, playing a small part in a large organisation or process. Service design has assisted CIT, from frontline employees to senior management, to understand that all the cogs in a service should be working in harmony and not in isolation as individual cogs. As providers of a service, employees at CIT need to understand their cog and all the other cogs that are part of one cohesive process, and the impact this has on the *customer* who should see a seamless series of touchpoints.

In her blog post, Gleneicki (2013) asks if employees are forgotten in the heat of customer experience design efforts, stating that what we fail to acknowledge is that the people behind the delivery of that customer experience must come first. Employee ownership and a sense of pride in their work will directly relate to the customer experience. If we fix the people and culture issues first, then customer experience will follow. In a similar post Gleneicki (2012) talks about the *right culture* and defines culture as a set of values, beliefs, underlying assumptions, attitudes, and behaviors shared by a group of people. It's *how we do things around here*. Culture should allow employees to be creative and come up with new ideas, it should

almost be part of their day-to-day job and it will empower them to do their jobs better, which in turn leads to a better customer experience.

According to Smith and McKeen (2003), culture is extremely hard to change and exerts its influence in different ways. Although employees and students were involved in a number of workshops to co-create service improvements for students, there was still a missing piece of the jigsaw; the employee journey needs to be mapped to understand the on-stage experience and how this directly relates to *customer* experience.

After reflecting on the pilot project, it was agreed to host a workshop with key front-line employees to brainstorm and ideate around the entire Admissions process and the current bottlenecks that are experienced by employees, on-stage and back-stage. As the organisation evolves, as new people come and go, as the experience improves, and as the culture shifts, the map will continue to evolve. The employee journey map facilitates a culture transformation (Kramp, 2012).

Conclusion

At CIT, each stage of the student lifecycle, from prospect to alumni, is treated as distinct separate interactions and the flow of the student and their experience through the lifecycle has not been considered from a service point of view until now. Each business unit works to provide a service to a student at that particular point in time without considering the overall *customer* experience. Many students are directed from one *helpdesk* to another and wander around campus in a confused state. Further research will endeavour to review the entire student lifecycle in segments, using a service design approach. It will attempt to change the student experience by delivering services that are more customer-focused. It will analyse the current *as-is* process, highlight the problems areas and inefficiencies and design a new *to-be* process, all the time focusing on the student experience. While the student is referred to as the customer, academic and administrative employees are also customers of these services and the next phase of the project will set out to provide a more streamlined and simplified experience for all. The focus will be on removing complexity and uncertainty from existing processes and procedures and using empathy to understand the experience of all involved.

CIT are currently working to formalise and define a Student Lifecycle to be used as a building block for refining internal processes and allowing us to continually make the services we deliver more student-centric.

RECAP was a six month pilot project at CIT which has proved that service design as an approach can help us to improve how we do business with regard to the services we provide to our *customers*. As a follow-on from the RECAP project, the next phase of the student lifecycle transformation will look at existing culture and *how we do things around here* at CIT. A parallel project will analyse the applicant stage of the lifecycle, with the focus on automating the application process for all prospective students and making their initial interaction with CIT a positive one.

It is important to mention that an inside-out design thinking approach needs to be embedded in the organisation but this will take some time. Confidence will come from small successes like the RECAP project.

The people and culture aspect of the initiative will require further research and effort. Service design iteratively moves from designing intangible experiences to designing the tangible elements that enable the desired experiences to occur in a coherent way (Sangiorgi, 2009). During the RECAP project, the focus was on the student experience, while maybe not placing enough emphasis on the employee experience and the importance of those providing key services. An employee journey map needs to be developed over time and if the on-stage employee experiences can be improved iteratively then a better *customer* experience can be guaranteed in the future. Employees are the lynchpin of great customer experiences. Employees who are motivated, empowered and enabled with the information, tools and technology they need to deliver on the brand promise can make or break the customer experience (Hostyn, 2013).

The higher education sector needs to consider the deficit in an overall approach to the actual student lifecycle and the supporting of same. The current complexity of the processes *is* painful for all involved, in particular, front-line employees and students, and there is a lack of cross-functional communication. There is a need to understand the service before introducing products into the service. CIT needs new ideas and a fresh approach where previous attempts to re-design processes have failed.

References

Beckman, S.L., Barry, M., (2007). Innovation as a learning process: Embedding design thinking. *Calif. Manage. Rev. 50*, 25.

Bitner, M.J., Ostrom, A.L., Burkhard, K.A., (2012). Service Blueprinting: Transforming the Student Experience. *EDUCAUSE Review, 47(6)*, 38

Kramp, J., (2012, November 21). *Employee Journey Mapping* [Web log message]. Retrieved from http://www.touchpointdashboard.com/2012/11/employee-journey-mapping/

Brown, T. (2009). *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. New York: HarperBusiness.

Kotter, J.P. (1996). *Leading Change*. Boston: Harvard Business School Press.

Franz Gleneicki, A., (2012, April 24). *It's Time to Focus on Employee Experience* [Web log message]. Retrieved from: http://www.cx-journey.com/2012/04/its-time-to-focus-on-employee.html

Franz Gleneicki, A., (2013, December 10). *This Trumps Customer Experience* [Web log message]. Retrieved from: http://www.cx-journey.com/2013/12/this-trumps-customer-experience.html

Hostyn, J., (2013, July 17). *What Does Your Empl. Exp. Look Like* [Web log message]. Retrieved from: http://www.joycehostyn.com/blog/2013/07/17/what-does-your-employee-experience-look-like/

McGowan, P. (2010, March 30). *Design Thinking & Culture Change* [Web log message]. Retrieved from: http://patrickmcgowan.typepad.com/apply_steam/2010/03/design-thinking-culture-change.html

Sangiorgi, D. (2009). Building up a Framework for Service Design Research. Aberdeen, Scotland: 8th European Academy Of Design Conference.

Smith, H. & McKeen, J. (2002). Instilling a knowledge-sharing culture. Athens, Greece: Third European Conference on Organisational Knowledge, Learning and Capabilities.

Pioneering a Design-led Approach to Transform Higher Education Services

Heather Madden
Cork Institute of Technology
Ireland

Abstract

In third level institutions, there are many disparate actors, systems and processes involved in service delivery and too often staff work in silos with little or no understanding of the personal impact of the student journey. The higher education sector endeavors to make all the services we deliver more useful, usable, efficient and student-centred but sometimes there is insufficient consideration of an overall approach to the actual student lifecycle and the supporting of same. The current complexity of the processes can cause frustration for those involved, in particular, front-line staff and students, particularly where there is a lack of cross-functional communication. There is a need to understand the service before introducing products into the service. An effort is now under way in one institute, to consider how Design Thinking could be applied to higher education services, as a series of iterative change projects, with the ambition of long-lasting sustainable change. This paper seeks to review existing literature in order to assess how one can build on previous experience, and make a contribution to the body of knowledge, based on the current dearth of research in the area of Design Thinking in higher education.

1. Introduction

Cork Institute of Technology (CIT) is a publicly funded higher education provider. It is the largest of Ireland's network of thirteen Institutes of Technology and currently has in the region of 15,000 registered students with approximately 2,000 new entries year on year. Its education, research and training provision spans a wide variety of disciplines, from business and humanities through engineering and science to music, drama, art and design.

In 2011, Senior Management requested a review of current IT systems and a proposal for integration of the same. The problems that existed included issues with data quality and timely availability, lack of online student self-service, isolated enterprise applications and a disconnect between academic business process and the IT solutions needed to support them.

CIT is currently investigating if Design Thinking can be embedded within an existing culture, not just as a once-off project, but as a way of improving and aligning all the processes that make up the entire service. As part of a plan to transform and streamline services to students, a Service Design methodology was recently piloted, which effectively re-designed, aligned and automated some of the key business processes within the student lifecycle.

The next steps are to see if this approach can be used to transform services over the coming years. This paper is one step on a practice-based research journey to ascertain if higher education can use Design Thinking to:

- Improve existing processes,
- Enhance the staff and student experience and
- Ensure the right tools are in place to support staff and students in a third level institute.

Existing literature will be explored under a number of headings in order to gather insights and knowledge on the use of Design Thinking as a change enabler in public sector organisations.

2. Innovation

Innovation happens every day and is all around us and it can be anything from breakthrough research that cures a disease or small ideas that help to solve a particular problem in a particular situation. This paper is looking to assess whether design can be a driver for innovation in the higher education sector. There is no one simple definition of what innovation is but it can be considered as a new idea, product or process that leads not only to improvement but 'doing something different rather than doing the same thing better'.

However change cannot always be regarded as innovation since it does not always involve new ideas or does not always lead to improvement in an organisation. Innovation can be defined as the implementation of a new and possibly problem solving idea, practice or material artefact which is regarded as new by the relevant unit of adoption and through which change is brought about [14].

There is a different process of innovation suitable for both public and private sectors and the diverse range of organisations in both. Innovation is not seen

as a core activity in many public sector organisations, in particular higher education. The inflexible character of these organisations is often the main cause of the scarcity of innovation.

Von Stamm [20] observes that creativity is associated with our thinking, and innovation associated with our behaviour. In order to allow people to think and behave differently in any organisation, the barriers to the collective creativity of that organisation need to be removed, or at least reduced. Many initial innovations will be small quick-wins that are focused on incremental change, and this is a good place to start. Rather than just encouraging people to think of new ideas, transferring those ideas into practice is what fosters real change.

Many people have ideas and a voice but do not get an opportunity to act on their creativity as a result of day-to-day obstacles. In order for creativity to flourish, the right leadership must be in place, which can foster an environment that allows people to ideate, experiment, take risks and explore their hidden talents. Gouillart [9] believes that any organisation that can create a link between business processes, and a team of 'integrative thinkers' [5] will enable boundless opportunities for the future. A model for innovation for the higher education sector is necessary, which can be used to gradually change the reputation of public sector organisations as static, complex and risk averse.

2.1. Innovation in Higher Education

In higher education, an environment needs to be cultivated where employees can unleash their capacity for innovation and have both the physical and psychological environment to do so. In order for creativity to become acceptable in the higher education sector, steps need to be taken towards alleviating, and in the long term, removing the barriers to change, and subsequently allowing space for innovation to happen. This innovation must be borne out of co-creation activities encompassing both the employees and customers of the organisation.

Innovation in the public sector can lead to more efficient organisations and better services for the public. In order for innovation to prosper in any organisation, it is necessary to strengthen the incentives for innovation by providing opportunities and skills to employees and management to explore new ways of doing their jobs. This means having the right leadership in place to foster creativity and aligning the culture with new methods over time.

3. Service Design

The emergence of Service Design in 1984 as a tool to be used by organisations was a significant step in realising that services should be subject to the same precise analysis as other business operations. Indeed Gloppen [8] acknowledges that there is little research on Service Design as a strategic resource for service organisations. The lack of acceptance by business leaders that Design Thinking can both help them as leaders with their organisation vision and help their employees to problem solve and innovate could be detrimental.

Service Design looks at the design of a service from the user perspective and can be used to create new or improve existing services. User experience and the involvement of users in the co-design process is paramount to what Service Design stands for [17]. Service Design is a holistic integrative approach that uses a wide range of tools and methods to deliver more value primarily to the end user but also creating a more efficient and effective organisation in the process. The service interface in Fig. 1 is made up of a number of touchpoints that the user of the service has with an organisation. A touchpoint is an interaction point with one of the elements of the service offering.

Figure 1. Service Interface [17]

Service Design and in particular Service Blueprinting can help organisations and critically higher education, to better understand, assess and improve the services provided to both staff and students [18]. Service Design and Design Thinking can support any institute in becoming more focused on the student perspective, but it will also engage employees in creating new, or improving existing service offerings. Higher education is a service. A service is an interface with a customer. In any higher education institute, there are many services provided at various stages of the student lifecycle, from prospect to alumni.

In order to take the design process from initial information and insight gathering, through to defining the right problem and delivering a solution to fix this problem, there are a number of key elements. Many authors agree that a service is made up of a series of touchpoints and an evolving attitude that is user-centred at its core is central in defining how the touchpoints relate to each other and the user [17] [18].

At present, in the public sector, Bailey et al [1] have found that a great deal of Service Design happens without any professional or hands-on design involvement, which is what needs addressing. Service Design has the power to unleash creativity and innovation in the higher education sector, essentially because it is a co-creative process that focuses on students as customers.

The problem with Service Design seems to be the difficulty in selling it to the organisation and designers themselves find it difficult to explain what Service Design really is. The word design can often bring a sense of mystery to a process and the challenge then is to encourage employees not to be afraid of design and eliminate the perception that they have to be highly imaginative people to use design tools and techniques. Building in-house capabilities in Service Design tools and techniques is therefore vital to embedding design in any organisation, as these in-house 'designers' will have direct knowledge of how things work.

4. Organisational Change

A widely recognised belief when delivering any kind of change is the vital importance of creating a vision, selling that vision to all ranks of the organisation and clearly communicating the vision while drumming up some excitement [11]. This vision should be easily understood and will motivate people towards the change. Kotter [11] cautions that without a sensible vision, a transformation effort can easily dissolve into a list of confusing and incompatible projects that can take an organisation in the wrong direction or nowhere at all. By their nature Service Design tools allow people to work towards a vision that is user-centred. Certainly a vision is important but what many organisations lack are leaders at all levels that can make this vision a reality. Martins and Terblanche [14] recognise the importance of creativity and innovation in the change process and emphasise that embedding a fresh and creative culture is paramount to achieving real change.

Change needs to be driven from the top, but it is also imperative that there is buy-in from stakeholders at all levels of the organisation. It is not adequate to include staff in a co-creation and design process; they need to appreciate what the change is about, how it will influence their day-to-day jobs, and how it has the potential to transform the student experience. It is important to understand the end goal and how their ideas should be at the forefront of this change process. It is clear that in order for change to be adopted it must be co-created and the challenge co-defined from grassroots to the top level of the organisation.

It has conclusively been shown that organisation silos have a huge impact on change and are a constant stumbling block as iterated by a number of authors [4] [20]. Where there is an existing issue of organisational silos, individual departments tend to focus on their cog in the wheel and not the process in its entirety. It seems clear that a lack of integration across organisational departments in providing a streamlined cohesive service to users is one of the main hurdles to jump when effecting change. Departments are often focused on fire-fighting immediate operational issues and do not always get the opportunity or the time to be innovative or experiment with diverse ways of working.

Various authors have considered the culture matter and Liedtka [12] asserts that you need people at every level on-board and eager, not just those at the top of the chain. Kotter [11] substantiates this and believes it is important to 'make the change stick' by fostering a new culture. A new culture will develop over time through small consistent innovations; this can take years and must not be rushed.

Kotter [11] points out that if change is needed within a specific department, then that department manager is fundamental. He emphasises that if these individuals are not 'new leaders, great leaders, or change champions, phase one can be a huge challenge'. Both this authors experience and the existing literature demonstrate that it can sometimes be necessary to implement a small change project in order to convince a department manager of the potential of such a change initiative.

With any change initiative, achievable, short-term targets need to be set, and once accomplished, will motivate people to persist and keep trying. The celebration from quick-wins will create buy-in for future change projects. It is important to consider current work habits and communication styles of individuals and groups, and attempting to change these to leverage more sophisticated alternatives.

Hammer and Champy [10] propose that process re-engineering must be an all-or-nothing organisation-wide strategy and cannot be carried out in small careful steps. Based on the existing review of change projects in higher education, incremental change, along with participation from all stakeholders is imperative, particularly when the culture of an organisation is resistant to change. Other authors disagree with Hammer and Champy [10] and harmonise that the short-term wins are important to create momentum and celebration and any significant organisational improvement. Kotter [11] highlights that 'commitment to produce short-term wins helps keep the urgency level up'.

According to Gouillart [9], in order to implement change and transform processes in an organisation, employees and external stakeholders need to be jointly engaged in designing the new model of the business. He stresses that many conventional change approaches run out of steam because of their internal

and top-down character. Bailey et al., [1] concur with other authors and claim that it is far easier to do 'small scale repurposing of services' rather than large scale organisational change.

Many authors refer back to the organisation culture, and the attitudes and behaviour of the employees and management providing the service, as having a huge impact on an organisations interaction with its customers and employees. Bailey et al., [1] acknowledge that public service change necessitates people being involved in the change from the start; these people being the public, citizens and users of a public service. This would in turn lead to users adopting the change and embracing the new way of doing things. So how then can one transform an existing organisation to becoming design-friendly and reshape the existing cultural standards? Change is constant and an organisations ability to be proactive to change rather than reactive will determine its success and agility.

Although up until now the use of design as a way to transform public sector organisations has been on the small scale, there are examples of large scale transformational change such as the Helsinki Design Lab and Nesta's Creative Councils project. However, much of the literature seems to overlook the possibility of small incremental change being delivered from the bottom or middle of the organisation and the impact this approach could have on the journey towards organisational change. Overall, there is not enough existing research on using Service Design as a bottom-up approach towards transforming an organisation into an innovative, progressive, efficient and user-centred one.

5. Culture

Organisation culture is central to the running of an organisation. As it is intangible and vague, the type of culture that exists in an organisation can often be difficult to define. It is based on tradition and can be very powerful in determining how people work, interact with each other and make decisions. In order for innovation to occur, the existing culture must first be understood. A strategy and structure needs to be put in place that allows behaviour to change in a positive way. Improving communication across departments can be a first step in the right direction. Organisations need to shift their attitude towards a culture focused on innovation.

Culture represents the behaviours that people develop and reveal over time [4]. Changing behaviour has a direct influence on any culture. The focus needs to become about thinking differently and behaving differently. At the same time Kotter [11] acknowledges that an individual's behaviour within a team or organisation influences the wider behaviour

and whether collaboration, conversations and connections take place.

The public sector is often considered to be a risk and change-averse culture and one that is not supportive of creativity and innovation. Bureaucratic and hierarchical in make-up, along with internal politics, provides a strong influence over what goes on and can be hard to crack. Flexibility and a willingness to adapt are not key characteristics of the public sector and are very dependent on individual leaders and managers. There is a need to deliver public services in a better way by means of a user-centred approach.

Martins and Terblanche [14] reveal that organisation culture forms an essential part of the general functioning of an organisation and this is a contributing factor as to whether creativity and innovation can occur. They propose that culture influences the degree to which creativity is encouraged, sustained and applied and the conflicting power of culture in an organisation is that it diminishes efficiency. Matthews et al., [15] indicate that past practices, hierarchical structures and silos within an organisation can present as barriers to change and innovation. Indeed Battarbee et al., [3] refer to an 'unsympathetic culture' that is not focused on customer experience and nurturing an empathic mind-set can help to foster a new culture.

One author highlights that staff at all levels should be trained in the tools of Design Thinking. Brown [5] believes that a change in culture to one focused on innovative activities and attitudes can be done through the introduction of new tools, setting expectations up-front and measuring the innovation that is required. He favours workshops as a method to expose people to Design Thinking and reveals that pilot projects will help market the benefits of Design Thinking within an organisation. This was validated in a recent pilot project in the author's organisation where it was shown that small innovations can have a positive impact and lead to more change. Management need to promote continuous improvement while at the same time allowing time for new ideas and experiments to flourish.

There seems to be little agreement in the literature on the type of culture needed to improve creativity and innovation, however, Martins and Terblanche [14] identify the dimensions that influence the degree to which creativity and innovation takes place:

1. A strategy that encourages creativity and innovation in the implementation of new products and services
2. A flexible structure that encourages teamwork and collaboration across existing silos
3. Support mechanisms that encourage new ideas and provide time, information, resources and technology for this

4. Employee and management behaviour that encourages innovation, idea generation, risk taking and support for change

5. Open communication between individuals, teams and departments

A lot of what is wrong with public sector organisations is their tiered structure and management style. Many of the existing public services lack the ability to be agile and efficiency is often defined in terms of a financial return rather than a customer experience. There is a strong link between culture and change and it can be assumed that in order to implement any positive change, there has to be a shift in the organisational values. Influencing change in individual departments can involve identifying a sub-culture that perhaps doesn't exist organisation-wide. Every organisation will have a different path to changing mind-set and figuring out what that path is can be a brave encounter. Design Thinking tools may help an existing culture to become more open and willing to see things in new ways but can they encourage innovation in a sustainable way?

Many higher education institutions in Ireland have a strong management rather than leadership culture. It is leaders that will play an important part in shaping a new culture based on their own desire for continual improvement. It is these leaders that will be able to empower and cultivate employees into a new era of change and innovation.

Changing mind-set and culture to stimulate creative thinking among the front-line employees will build and foster a more innovative approach to 'how we do things around here'. Harnessing new ideas can make the organisation more effective and better equipped to fix problems before they happen.

6. Design Thinking

Brown [5] describes Design Thinking as 'exploring different possibilities'. He suggests that it is 'open-ended, open-minded, and iterative, but that a process fed by Design Thinking will feel chaotic to those experiencing it for the first time'. He reminds us that it will take an organised, consistent and efficient approach to achieve organisation-wide change.

Initiating administrators into the mysteries of Design Thinking can unleash passion and energy and creativity. It can also elicit new levels of engagement from people who may have spent so much time fighting the system that they could barely imagine having a role in redesigning it. Without a sustained commitment and an integrated approach, an initial effort might be overwhelmed by day-to-day exigencies of running an organization [5].

There may be resistance to adopt a Design Thinking method for a number of reasons but if employees can understand the benefit then it may be easier. In a number of organisations, design teams exist independently, but how then can a Design Thinking approach be embedded within areas of an organisation once the design team leave? How can design tools be entrenched within an organisation, which prefers to be familiar with their current way of doing things, even if that current approach lacks efficiency? Employees need to be empowered to use the tools themselves without supervision from the designers.

Battarbee et al., [3] observe that Design Thinking allows us to come up with unique solutions to tackle everyday problems, with results that are more meaningful for the users of that solution. It allows one to focus on real-life behaviour using co-creation and observation, rather than coming up with solutions that we think may work.

Design Thinking is unlikely to become an exact science, but as with the quality movement, there is an opportunity to transform it from a black art into a systematically applied management approach. The trick is to do this without sucking the life out of the creative process – to balance management's legitimate requirement for stability, efficiency and predictability with the design thinkers need for spontaneity, serendipity, and experimentation [5]. The tangible benefits will have to be clear if Design Thinking is here to stay.

While trying to embed Design Thinking as a new tool for higher education, it is imperative not to lose any of the innovation, imagination and inspiration that this process brings by trying to put structure on it. Design Thinking can be practised, by everybody in all parts of the organisation, from front-line staff to senior management, as a problem-solving approach.

'Co-creative transformation, mixing bottom-up and outside-in approaches, produces the infectious enthusiasm and momentum that motivates middle and upper management to invest the necessary resources for change' [9]. On the other hand, Liedtka [12] discusses the strategies of business thinking versus Design Thinking.

Business thinking is predicated on assumptions of rationality and objectivity. Its decision driver is cold, clean and economic logic. Reality is precise and quantifiable. In contrast, Design Thinking assumes human experience, forever messy, as its decision driver and sees true objectivity as an illusion. Real-life behaviour rather than theory is what matters for design [12].

In his book, Brown [5] maintains that 'the emphasis on fundamental human needs, as distinct from fleeting or artificially manipulated desires, is what drives Design Thinking to depart from the status quo'. He argues that there are design thinkers in every organisation and we need to seek them out,

foster them and free them up to be creative people and potential change champions.

Beckman and Barry [4] define Design Thinking as a problem solving process that involves actors from many disciplines using tools, methods and language that are diverse from normal everyday business function.

A number of authors contend that selecting the right people for any change project is an important feature for success [15] [20]. They stress the importance of selecting the right people for the job, people who are motivated by change and want to be involved, but also people that have integrity and respect within the organisation. Change champions or design champions will be the vehicle for transformation and the agents of change. They will not let barriers get in the way, and they will seek out opportunities to bring the organisation on a new journey of design innovation.

Changing the relationships between the main actors involved in delivering a service, and those using a service, will help to build better service capabilities. Empathy will assist in discovering the moments of truth for all actors along the journey. Unless a change champion walks in someone else's shoes, they will never gain a true understanding of their experience, and their thinking will be based on assumptions. Empathy involves immersing oneself in the experience of the user, observing the user and engaging with the user. This is where an inside-out service designer can have vast benefits, working alongside the actors inside and outside the organisation.

Kotter [11] emphasises a 'see-feel-change' approach rather than an 'analyse-think-change' approach and suggests that in order to change behaviour, we should focus on people's feelings rather than thoughts; this is precisely what empathy does. Battarbee et al., [3] insist that when an organisation allows itself to be motivated by an understanding of people's needs, it can 'unlock the creative capacity for innovation'. This sort of attitude needs to be supported and fostered and it needs enthusiastic champions to 'keep empathy alive'.

The term Design Thinking can sometimes create mystery and uncertainty, and rather than trying to sell Design Thinking as a new approach, the focus should be on the benefits it brings; the outcomes should speak for themselves. Human needs are fundamental to Design Thinking and these needs should drive innovation. Having the right people involved is essential, people who understand the need for change, and can be empathetic towards the users.

6.1. Design and the Public Sector

Changing public services has to begin with people and Design Thinking enables government agencies to put people at the heart of the design process. There are a number of design initiatives underway in the UK but not many in Ireland. Organisations like *The Design Council* and *Future Gov* are currently working with many local and national government agencies to help them transform their services using design.

The Design Council [7] created the Public Sector Design Ladder, Fig. 2, in order to demonstrate that design can be applied at different levels and it can be used as a 'diagnostic tool and roadmap for progression'.

Figure 2. Public Sector Design Ladder [7]

Some examples of how Design Thinking can be adopted in the public sector include Lewisham Council. A project was initiated with the aim of embedding Service Design within the council among employees as a new way of working. A 'learning by doing' approach was used where 'front-line staff were armed with tools and techniques so that they, rather than the designers, could go out to find and fix problems' [7]. As a result of this project, staff morale at the council improved, cost savings were introduced and customers received a more efficient service.

Another example is the UK's redesign of the government's digital services by engaging with users to deliver simple and fast services online. Their aim was to streamline the services they delivered online and merge the websites of all government agencies into one portal making them 'simpler, faster, clearer' [7]. This included 24 ministerial departments and 331 agencies and public bodies. The team continues to use design to refine the user experience and spread design throughout the government.

A further example and one in higher education that has to be mentioned as it was the inspiration for research at CIT, is the JISC Enrolment Project in conjunction with University of Derby. They used a Service Design approach to improve the student experience from pre-entry to 'readiness for learning'. Baranova et al., [2] discovered that rather than

assuming they knew what the student wanted, they 'actively sought their input as end-user designers and co-producers of their own student experience'. They continue to use Service Design as a methodology at Derby to focus on student retention throughout the delivery process. At the University of Derby, Baranova et al., [2] found that Service Design was a powerful tool to engage not only the front-stage and back-stage staff involved in the service delivery but also management. It was a transformative way to make everyone see the complexity of these processes, from the student perspective, and seeking student input in redesigning these services was a new approach, that could add value to both the university and the student experience.

6.2. Embedding Design Thinking

Design Thinking is an enabler and a skillset that can be applied to challenges within any organisation. The challenge is to enable 'non-designers' to participate and facilitate design-led change without the need for a designer. This will ensure design is embedded in a sustainable way. It is necessary to create *design champions* who can propose and apply design methods in a positive way. Employees and managers need to be trained to apply design tools in their own environment, which will lead to some incremental improvement in an existing process or service. There is modest research on this topic and little existing evidence on how to embed design as an approach in the public sector.

When selecting the right people to become champions, much of the literature advises selecting people who are credible, motivated and already have some desire for change. In order to change behaviour it is essential to expose people to a new way of working. Matthews et al., [15] use the term 'design interpreter' as a necessary human force to 'influence and synthesise opportunities across the organisation'. Designers play an important social role when delving into multidisciplinary project teams that may have historical nuances.

Design Champions, or change champions that use design approaches, can add value and credibility to any project. These champions need to ensure that employees don't revert to their old ways of working. One needs a 'community of enablers' to work together and make sure the good ideas come to fruition. Tjendra [19] agrees and claims that several elements are necessary to establish and embed a design culture including top-down advocates and 'empowered ground-up employees lead by the process champion middle manager who is preferably a designer'.

6.3. Empathy and Engagement

Empathy is an important first step in any design process as it allows the designers and non-designers to have a deep understanding and feeling of people's needs and issues. In understanding these requirements, stakeholders become more open to solving design challenges that are truly meaningful for the users. 'Research shows that when we are empathetic, we enhance our ability to receive and process information' [3]. Sometimes within large organisations, the culture can be insensitive to what users are really undergoing and this can be as much to do with the daily stress of keeping operations going.

There can also be a culture of insensitivity to users based on employees own feeling that their needs are not being met, that no-one is listening to them. People behind the delivery of a service, in particular those at the front-line have first-hand knowledge of user issues.

As an institute, the intent should be to fulfill the needs of our students. Sometimes when talking about implementing change at CIT, words like *process* and *streamline* and *service* and *re-engineering* are used. This language needs to become more customer-focused so that it is understood by everyone, swapping those words for a humbler language; *simple steps, good experience, easily understood, clarity, improve the experience, provide a better service, support staff and students* are phrases that can be one of the many steps on the road to transformation.

Dale Carnegie [6] expressed that 'the deepest urge in human nature is the desire to be important'. Involving employees in a co-design process increases employee engagement, because humans have a distinctive urge to feel that their actions and ideas can contribute to a larger change initiative. The Japanese have a name for involving and respecting all ideas and contributions from employees, kaizen, or continuous improvement. By listening to employees in a co-design process, an organisation can increase commitment while ensuring that there is continuous change benefiting everyone, not only the users.

In other words, there is always room for improvement and continuously trying to become better. At CIT, co-creating gradual incremental improvement rather than fundamental change is a more achievable goal.

7. Design Thinking and Leadership

Every change undertaking needs a leader with a vision who will be empowered with a new direction for the future. Kotter [11] defines the function of a leader as one who implements change, but can that leader guide other managers and leaders to a new

way of design-led change in an organisation that is traditionally slow to adapt? Higher education institutions are currently under pressure to change from both internal stakeholders, and outside-in pressure from industry.

Leadership is about building on existing relationships, coaching, mentoring and according to Carnegie [6] 'helping people to achieve what they are capable of'. 'Design Leadership is about empowerment, vision and driving change through design. Design leaders nurture creativity by embedding the design function into organisations' [16]. Design Leaders are the ones that plant the Design Thinking seed in an organisation and encourage stakeholders at all levels to adopt design processes in some way.

Facilitation, communication, good interpersonal skills and empathy are essential for a leader that wants to integrate Design Thinking into an organisation. Building trust and a shared interest can influence people to collaborate, ideate and define the *real* problem before focusing on a solution. Co-creation is about building the human bridges across departments and creating connections and a joint focus on the customer experience.

It takes actions rather than words to create this influence. If people can see the benefits of these actions then are likely to come on board and work together to create change. Communication is central to turning intention into action. Encouraging people to take risks, communicate, be open, and share thoughts and feelings, takes time and patience. Employees need to understand how Design Thinking can help them in their everyday jobs and make their lives easier. People need to feel that they are a valued part of the organisation. Design Thinking leadership should involve incremental and continuous underpinning using champions and advocates to spread the word. Carnegie [6] believes that 'you make them want to come along. You ride, you go and you just suck everybody else with you'. CIT needs to build a repository of design thinkers that can spread the word across projects and opportunities in every area of the organisation.

Matthews et al., [15] observe that design leadership is more than a leader with design skills or training, but someone who has an understanding of the day-to-day business and who can 'synthesise opportunities across the organisation'. Gloppen [8] reiterates this and adds that design leadership is about helping to turn business strategies and visions into actual solutions. Miller and Moultrie [16] insist that it is the design leader who needs to encourage all within the organisation to embrace the design process as a new way of how we do things around here.

Leaders can encourage more experimentation, and by using Design Thinking as a tool, they can develop value for customers at every touchpoint. The difficult part is getting people to believe the message and that can only come from a credible design leader, someone who has earned trust and a reputation for delivering change, based on the needs of the participants. 'Designers and managers are in this together; try and show each other the way. Anyone trying to innovate in a big bureaucracy needs all the help they can get' [12].

Design leadership is about facilitating change and creating opportunities which allow organisations to deliver more cohesive services. As leaders are meant to motivate and energise employees, design leaders have a vision for change and help to empower people to become more focused on turning that vision into reality. When it comes to Design Thinking, a leader needs to inspire colleagues to start with a blank sheet of paper. Rather than trying to fix something that exists but never really worked, Design Thinking will allow people to explore all possible options and to 'resist reliability' [13].

A leader must inspire people to think laterally and explore options. It is about creating a vision and in order to develop innovative services, a leader is required. Gloppen [8] describes Service Design Leadership as:

An approach where leaders in service organizations understand and use the power and value of design and Design Thinking's contribution to a visionary strategy process intended to create innovative services. Service Design leadership involves a multidisciplinary and interdisciplinary synthesis approach to problem solving and innovation.

Design Leadership must be about helping people to jointly create a vision and helping them to use design tools to implement that vision. If we look at the perspective of using Service Design tools to innovate with regard to existing services, then a leader will enable and motivate a group to make small improvements and build on these improvements in an incremental fashion; it is keeping up the momentum that is important. This can be difficult in higher education as the academic year runs in cycles and different services are delivered at different stages of each cycle. Memories are blurred after each stage in the cycle, sometimes it is a full year before we need to deliver that service again, and we almost erase the pain-points from our minds.

Flexible collaboration between leaders, designers and front-line employees within an organisation will require a new mind-set and outlook that is focused on delivering benefits and value for customers through design-stimulated service innovations.

8. Conclusion

Design Thinking in Ireland and in particular Service Design is still an emerging field and

specifically its use in higher education and the public sector.

This paper is an initial discovery to see how Design Thinking can be embedded in a higher education institution, in order to create change and enhance the student experience. It focused on six key areas, and realised that in order to introduce Design Thinking and Service Design as methods for change, a leader first needs to create a vision for that change. Communicating that vision and getting employees on board is not an informal task, and the existing culture is a contributing factor to the degree to which innovation can occur. Organisation culture plays a fundamental role in the performance of any organisation. Design Thinking can help to break down the barriers to change and integrate opportunities across the organisation. Design Thinking is a process that focuses on the user and allows a team to come up with a unique solution.

In summary, the literature advises the following:

- Innovation needs to become a core activity in the organization.
- Service Design tools and methods can help an organisation to innovate.
- Change can be disruptive and individuals at every level of the organisation need to involved and energized.
- Design Thinking as a new approach can help to change an existing culture.
- Leadership is vital to encourage those within the organisation to embrace the design process as a new way of working.

In the context of the higher education sector further research will be conducted in the coming years to assess these theories. CIT are currently working to define and formalise a Student Lifecycle to be used as a building block for refining internal processes. It is this vision for change that will inspire and focus minds on the next steps of the journey. Rather than just implementing a number of change projects, there is a gap in the existing research, to discover if Design Thinking can enable an organisation of this type, to move towards becoming a more efficient and automated administration. The change management, people and culture aspect of the initiative will require further research and effort. CIT needs new ideas and a fresh approach where previous attempts to re-design processes have failed.

It is clear that there is a dearth of literature available on Design Thinking leadership and the area lacks research especially in the public and higher education sectors. This gap that will be addressed on this research journey while effecting incremental change projects to deliver student-centric services.

9. References

[1] Bailey, J., Julier, J., Kohut, T., (2014) 'Restarting Britain2: Design and Public Services', Annual Review of Policy Design 2, 1–10. https://www.designcouncil.org.uk (28 April 2015)

[2] Baranova, P., Morrison, S., & Mutton, J. (2010) 'Service design in higher and further education', JISC Briefing Paper; http://publications.cetis.ac.uk/wp-content/uploads/2011/02/Service_Design.pdf (28 April 2015).

[3] Battarbee, K., Fulton Suri, J., & Gibbs Howard, S. (2014) 'Empathy on the Edge: scaling and sustaining a human-centred approach in the evolving practice of design', IDEO; http://www.ideo.com/images/uploads/news/pdfs/Empathy_on_the_Edge.pdf (28 April 2015).

[4] Beckman, S. L., & Barry, M. (2007) 'Innovation as a learning process: Embedding design thinking', California Management Review, 50(1), 25.

[5] Brown, T. (2009) Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation, HarperBusiness, New York.

[6] Carnegie, D., (1995) The Leader in You: How to Win Friends, Influence People and Succeed in a Changing World, Simon & Schuster, New York.

[7] Design Council (2013) 'Design for Public Good', Annual Review of Policy Design 1, 1–50, Design Council; https://www.designcouncil.org.uk (28 April 2015)

[8] Gloppen, J. (2009) 'Service Design Leadership', ServDes 2009: First Nordic Conference: Service Design and Service Innovation.

[9] Gouillart, F. J. (2014) 'The race to implement co-creation of value with stakeholders: five approaches to competitive advantage', Strategy & Leadership, 42(1), 2–8.

[10] Hammer, M., and Champy, J. (2003) Reengineering the corporation: a manifesto for business revolution, HarperBusiness, New York.

[11] Kotter, J. P. (1995) 'Leading Change - Why Transformation Efforts Fail', Harvard Business Review.

[12] Liedtka, J. (2010) 'Business Strategy and Design: Can this Marriage Be Saved?', Design Management Review, 21(2), 6–11.

[13] Martin, R. L. (2009) Design of Business: Why Design Thinking is the Next Competitive Advantage, Harvard Business Review Press, Boston.

[14] Martins, E. C., and Terblanche, F. (2003) 'Building organisational culture that stimulates creativity and innovation', European Journal of Innovation Management, 6(1), 64–74.

[15] Matthews, J.H., Bucolo, S., Wrigley, C., (2012) 'Challenges and opportunities in the journey of the design-led innovation champions', Proceedings of the DMI 2012 International Research Conference, pp. 768–775.

[16] Miller, K., & Moultrie, J. (2013) 'Understanding the Skills of Design Leaders', Design Management Journal, 8(1), 35–51.

[17] Moritz, S. (2005) Service Design - Practical Access to an Evolving Field, London.

[18] Ostrom, A. L., Bitner, M. J., and Burkhard, K. A. (2011) 'Leveraging Service Blueprinting to Rethink Higher Education: When Students Become 'Valued Customers,' Everybody Wins', Center for American Progress.

[19] Tjendra, J. (2013) 'Why Design Thinking Will Fail', Innovation Excellence, http://www.innovationexcellence.com/blog/2013/02/25/why-design-thinking-will-fail/ (28 April 2015)

[20] Von Stamm, B. (2008) Managing Innovation, Design and Creativity (2nd edition), Wiley & Sons, Chichester, UK.

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Heather Madden / Cork Institute of Technology
Linzi Ryan / Vistamed Ltd
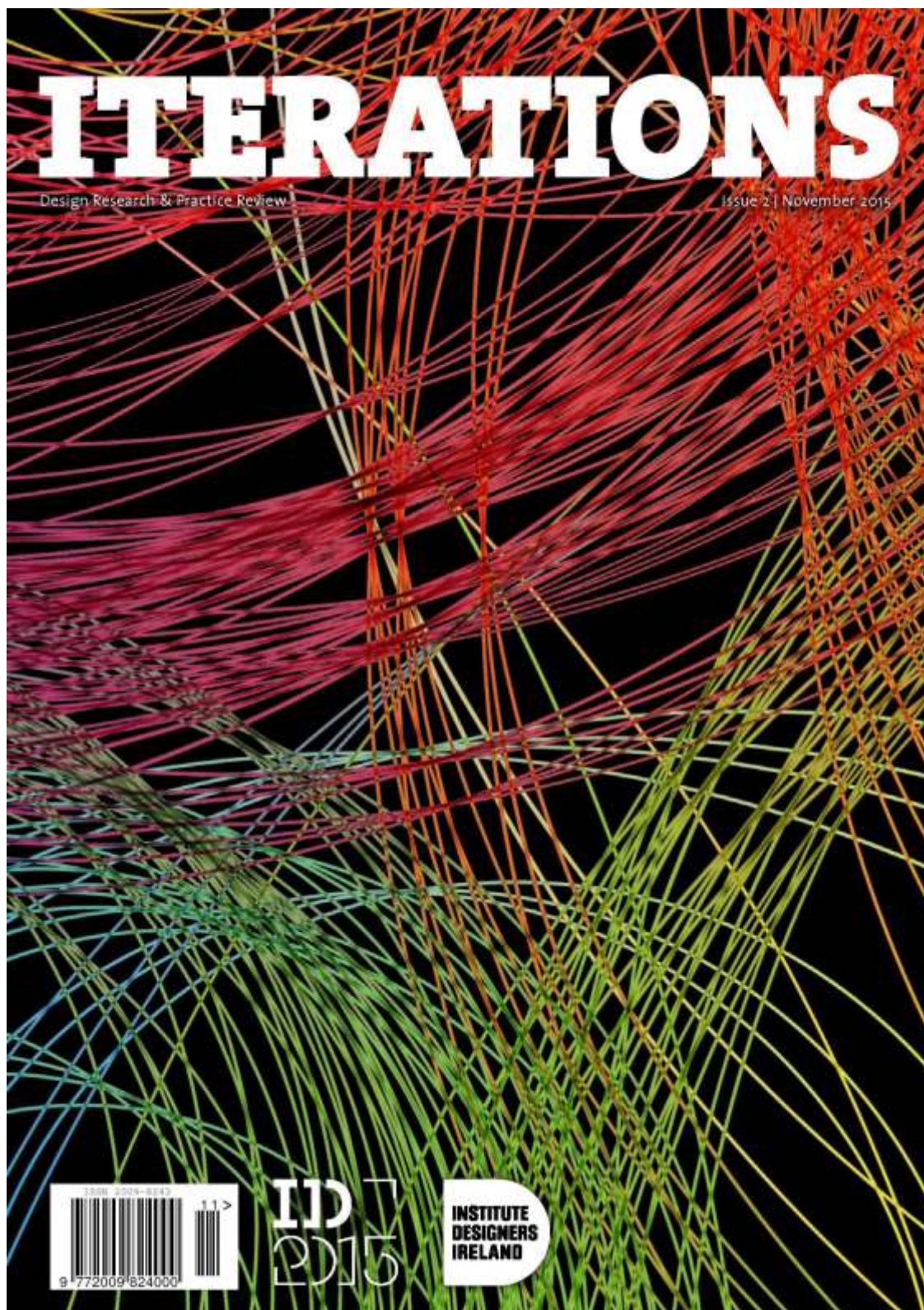
Moving towards user-centred services in the public sector

A movement has begun in the Irish public sector to embed Service Design as an innovative approach to conquer political and cultural divides in public organisations. Service Design utilises practical and scalable tools and techniques to address everyday problems by creating services which are more useful, usable, efficient and user-centred. There are many steps on the road to introducing Service Design as a sustainable approach to the point that it becomes instilled into the culture of an organisation across all departments and staff levels. This article examines approaches to enable public sector organisations to embrace and implement Service Design tools and methodologies as demonstrated through two stories; one from a higher education institution and the other a local county council.

References

Beckman, S.L., Barry, M., 2007. Innovation as a learning process: Embedding design thinking. California Management Review 50.25.

Blisse, M.L. Ostrom, A.L., Burkhard, K.A., 2012. Transforming the Student Experience.

Brown, T., 2009. Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation. HarperBusiness, New York.

Cameron, K., 1978. Measuring Organizational Effectiveness in Institutions of Higher Education. Administrative Science Quarterly 23, 604–632. doi:10.2307/2392582

Harris, M., Albury, D., 2009. The Innovation Imperative. Why Radical Innovation is Needed to Reinvent Public Services for the Recession and Beyond. London, National Endowment for Science, Technology and Arts (NESTA).

Holmlid, S., 2009. Participative, co-operative, emancipatory: From participatory design to service design, in: First Nordic Conference on Service Design and Service Innovation. pp.1–14.

Kezar, A.J., Eckel, P.D., 2002. The Effect of Institutional Culture on Change Strategies in Higher Education: Universal Principles or Culturally Responsive Concepts? The Journal of Higher Education 73, 435–460. doi:10.1353/jhe.2002.0038

Kimbell, L., 2010. Design leads us where exactly? Service design at a crossroads.

Liedtka, J., 2010. Business Strategy and Design: Can this Marriage Be Saved? Design Management Review 21, 6–11. doi:10.1111/j.1948-7169.2010.00059.x

Madden, H. 2014. Transforming Student Services in Higher Education. ServDes. 2014 - Fourth Service Design and Innovation conference

Marino, M., 2011. Creating a Framework for Organisations New to Service Design. Touchpoint - The Journal of Service Design 3.

Martin, R.L., 2009. Design of Business: Why Design Thinking is the Next Competitive Advantage. Harvard Business Review Press.

McPhee, L., 2009. Innovation in the Public Sector: Enabling Better Performance, Driving New Directions. Public Administration Today 26.

Moritz, S., 2005. Service Design - Practical Access to an Evolving Field. London.

Porter, G., Blaufuss, K., Acheampong, F.O., 2012. Gendered patterns of IMT adoption and use: Learning from action research. Research in Transportation Economics, Gender and transport Transaction costs, competing claims and transport policy gaps 34, 11–15. doi:10.1016/j.retrec.2011.12.005

Stickdorn, M., Schneider, J., 2012. This is Service Design Thinking: Basics-Tools-Cases. BIS Publishers.

Introduction

Public service organisations are currently under pressure to change and become more responsive to user needs, particularly in the areas of policy development, program design and service delivery (McPhee, 2009). Every organisation, whether private or public, has a unique culture with practices and traditions, which influence improvement and success (Kezar and Eckel, 2002). Design is a major contributing factor in the transformation of products and services for all types of organisations. Design led innovation can make public services more efficient and effective and at the same time deliver faster, clearer services that meet real user needs. It can help to change both the customer and organisation's behaviour through practical problem solving which can shape both the user and provider's experience with a service over time. Organisations of this kind can become more effective by using design techniques to influence change (Brown, 2009) but the complexity and changeability of them makes it difficult to garner a clear path (Cameron, 1978). In order to discuss how to embed Service Design in the public sector, first we must examine what Service Design is.

What is Service Design?

Service Design is a holistic, integrative approach that uses a wide range of tools and methods to deliver more value primarily to the end user but also creating a more efficient and effective organisation in the process. User experience and the involvement of users in the co-design process is paramount to what Service Design stands for (Holmlid, 2009; Moritz, 2005). The Service Design process begins with initial information and insight gathering, through to defining the right problem and delivering a solution to fix this problem.

There are a number of challenges when introducing a new methodology and Service Design does not happen in isolation. It involves changing mind-sets, reframing problems, changing existing work practices, encouraging more collaborative cross-functional activities and ultimately cultivating a more human-centred and creative culture. Indeed, Martin (2009) points out that an organisation needs to build skills to change organisational processes and norms over time and 'sow creativity across traditionally administrative functions'.

A key issue with Service Design seems to be the difficulty in selling it to organisations. Due to its intangible nature and high variability, designers themselves find it difficult to explain what Service Design really is. Brown (2009) observed that he spent far more time explaining and justifying to clients what design was rather than really doing it. Kimbell (2011) acknowledges that even those that support the application of design thinking have difficulty explaining it. Non-designers feel uncomfortable with the flexible non-linear approach that Service Design brings (Marino, 2011). Martin (2007)

maintains that many business leaders find the lack of structure and predictable outcomes hard to deal with and they have difficulty understanding the language of design. The word design can often bring a sense of mystery to a process and the challenge then is to encourage employees not to be afraid of design and eliminate the perception that they have to be highly creative people to use design tools and techniques. So how can public sector organisations overcome the challenge of using Service Design to transform their organisational culture and achieve user-centred change?

Due to the changeability of the services provided and the culture in which the services operate, there is no single answer to how to effectively embed Service Design methodologies within the public sector. However, through application and evaluation of two applied case studies, the authors propose an approach to the effective introduction and sustainable application of Service Design methodologies within the public sector.

The case studies

Action research, as the name suggests, refers to a class of research methods where interventions are part of the research process. It stems from the basic contention that complex social processes can be best studied by introducing changes into these processes and observing the effects of the changes (Porter et al., 2012). The action research case studies discussed in this article took place in two distinctly different areas of the public sector.

Fingal County Council (FCC) is a local authority north of Dublin with offices at Swords and Blanchardstown. They serve a geographical location of 452 sq km which spans rural, urban and suburban communities. They are consistently seeking new ways to both engage with the community and to efficiently and effectively meet their customer's needs. Service Design offered the potential to provide new and adjusted services in an innovative way.

FCC was involved in an intensive one-day workshop, which aimed to provide an introduction to Service Design methodologies, taught through the treatment of a specific issue. Tools were

taught to a sufficient level to allow application and development beyond the scope of the workshop. The workshop was used to address and explore two key areas:

- Development of an integrated customer service centre: What are the effects of a single point customer service desk on back-office operations and what resulting changes are required to facilitate this new approach?
- Redesigning the foyer: How can the foyer space be utilised to further engage with the customer and improve their overall customer experience?

It quickly became evident that the use of a single point customer service desk would have a significant effect on the delivery of services and would require the consideration of its effect on each of the services provided. Cork Institute of Technology (CIT) is a publicly funded higher education provider. It is the largest of Ireland's network of thirteen Institutes of Technology and currently has in the region of 15,000 registered students. As part of CIT's plan to transform and streamline services for students in a higher education institution, a pilot project was initiated to re-design some key business processes within the student lifecycle.

The RECAP project (Review and Enhancement of CIT's Admissions Processes), aimed to make some of the services for part-time students more useful, usable, efficient and student-centred. The project focused on reviewing and improving the part-time student experience from offer accepted to in class, ready for learning. At CIT, each stage of the student lifecycle, from prospect to alumni, was treated as distinct separate interactions. Prior to the project, the flow of the student and their experience through the lifecycle had not been considered from a service point of view. Each department worked to provide a service to a student at that particular point in time without considering the overall customer experience. Many students were directed from one helpdesk to another and wandered around campus in a muddled state.

So drawing on these case studies, what can we learn about adapting Service Design methodologies for application in the public sector? How can we overcome the barriers of an unfamiliar methodology to create true

user value provided in a more efficient and effective way?

Embedding Service Design in the public sector

As Service Design is a new practice, its implementation needs to ensure that this new approach becomes how we do things rather than a one-off project. It is important to embed design thinking into an organisation but this cannot happen overnight and will take time, effort and careful structuring. By capturing learnings from a range of projects, and illustrated through two case studies, the authors will provide five recommendations for applying a Service Design approach in the public sector.

1. Limit Service Design lingo

Service Design methodologies initially evolved to establish and develop services for private organisations. As such, the terminology used often reflects this. Beckman & Barry (2007) define design thinking as a problem solving process that involves actors from many disciplines using tools, methods and language that are diverse from normal everyday business function. For example, the use of phrases such as customers and value proposition, which may not be appropriate for the public sector and can cause an immediate barrier when first approaching public organisations to undertake the Service Design process. This is further exasperated by a lack of familiarity with Service Design specific terminology, for instance Customer Journey Mapping or Personas. By adapting the lingo to reflect what is typically used in the participating organisation, the understanding of the overall Service Design process can be simplified.

For example, in the FCC case study, staff referred to their service users as members of the public and so this phrase was used throughout the workshop. When reviewing the current service provision, rather than mapping the journey, workshop participants were asked to capture the current service process. Although the formal service terminology was verbally referenced, terminology used throughout the workshop was tailored to reflect that already used in the organisation. This both prevented confusion and facilitated the understanding of the Service Design approach in the context of their own organisation.

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Indeed, when workshops were conducted at CIT, the customers became students and the language of design was toned down. As an institute, the intent should be to fulfil the needs of students, which can sometimes mean treating them as customers. Previously when implementing change at CIT, words like process and streamline and re-engineering were used. This language needed to become more user-centred so that it was understood by everyone. Swapping these words for a softer lingo: simple steps, good experience, easily understood, clear actions, improve the experience, provide an efficient service for, support staff and students are phrases that were used on the road to transformation.

2. Get management buy-in

Convincing management that Service Design tools work, bringing people together and helping them to focus on delivering more value is a big step on the road to change. Leaders can encourage more experimentation, and by using Service Design as a tool, they can develop value for customers at every touchpoint. The service interface as mentioned by Moritz (2005) is made up of a number of touchpoints that the user of the service has with an organisation. A touchpoint is an interaction point with one of the elements of the service offering.

The difficult part is getting people to believe the message and that can only come from a credible design leader, someone who has earned trust and a reputation for delivering change, based on the needs of the participants. Liedtka (2010) underlines that designers, managers and leaders need to work together, helping each other to innovate and build expertise and competency to create a modern organisation. It is recognised that unless management are driving change through the use of these new design techniques then adoption will be difficult. To get positive buy-in and support from senior management, you need to demonstrate that a Service Design approach can help to:

- define and solve challenges
- stimulate innovation
- transform the organisation into a more agile, proactive, and efficient one

Ultimately, the best way to get buy-in is to demonstrate the results and benefits; the outcomes should speak for themselves.

In the FCC case study, high level management were the instigators of change and committed their time to the workshop and implementing change. They realised the need to engage with staff to gain insight into the current service and build staff support for future change. At the beginning of the workshop, it was made clear that it was a neutral space, where all opinions were valid. Information and opinions provided were strictly confidential and staff were encouraged to voice their opinions. This gave management an opportunity to hear from staff in a structured format and then take their ideas and co-develop them into real solutions. This openness of management to engage with and listen to staff demonstrated both the value they placed on their staff's expertise, and their willingness to implement change. This was appreciated by staff who took the opportunity to share their experience of the service and where they felt improvements could be made.

At CIT, the initial requirement for change came from staff who were frustrated with the existing process because of the downstream inefficiencies it created. After surveying part-time students who also voiced their frustration with the existing process, this evidence was used to convince management that a new approach was required and to formally initiate the RECAP pilot project. It was clear after this first project that Service Design was an obvious solution for many of the problems CIT faced. The project generated a buzz and excitement that had not been seen in the past. It was clear that steps needed to be taken to keep this momentum going and to gain commitment from management to this new way of working. This was not as easy as expected and ownership of the steps and improvements was not clear when the following cycle of part-time student induction came around.

3. Involve front and back-office staff

When designing services it is important to consider both front-office operations (those elements of the service which come into direct contact with the user), the back-office operations (those elements of the service which the user does not typically interact with) and the overlap between them. Due to the typically large size of public sector organisations, it can be difficult to gain a

clear view of a service in its totality. In order to effectively capture and redesign a service, both front and back-office staff participation is required, at all levels, including management. This captures the complete service comprising both formal and informal operations which can have a substantial effect on the final service design. This is especially required in bigger organisations where there may be a significant gap between the management who can change the service format, and the front-line staff who provide it. Harris & Albury (2009) consider that current methods of innovation are not fit-for-purpose for several reasons but mainly because they do not include actors in the co-creation process such as front-line workers and customers. As such, it is imperative that, when undertaking a service re-design within a public organisation, all stakeholders involved in the delivery of the service must participate.

During the FCC workshop, eleven employees across six areas participated (Organisational Development; IT; Architecture; Administration; Planning; Operations). Key insights were provided by the front-line staff in relation to informal lines of information and reoccurring issues reported by service users. For example, switch board staff were located directly behind the reception area. It was suggested by management that they be moved away from the front desk to a back-office operation. However, front-line staff noted that the current location of the switch provided them with up to date information which facilitated them in their service provision. This informal line of discussion would have been missed if not for the front and back-office staff contribution during the workshops.

Focusing on the front-stage is extremely important but ignoring the back-stage processes is detrimental to the success of delivering a great user experience. At CIT, it was realised that collaboration across silos and between front-stage and back-stage staff was essential to designing better services. Workshops that are properly facilitated make great use of people's time during the design process. Workshops were used to engage participants to creatively look at a particular problem which enabled cross-functional conversations. These initial workshops to map the existing process were attended by a

wide variety of academic, administrative and technical staff. A total of 52 staff attended three sessions and included everyone from department managers to department secretaries, programme co-ordinators, front-line admissions and fees staff to IT services technicians. The workshops provided a suite of tools to the participants that would allow them to exploit their own knowledge, experience and creative potential resulting in the ability to create relevant, innovative and practical solutions in their own work. The consequence was a multi-disciplinary creative and collaborative process bringing all people together engaged with a common challenge.

4. Adapt the toolset

A methodology needs to be in place to guide the designer and participants through the stages of a typical process. There exist many toolkits that enable groups to work together to create solutions, the Collective Action Toolkit from FROG Design, Double-Diamond from the Design Council, Stanford D.School Methods and the Service Design toolkit from the SPIDER European project. Although a methodology and toolkit are not essential for designing a new service, they do provide a framework for being more open and collaborative and can be used in conjunction with existing practices. Tools such as Customer Journey Mapping and Service Blueprinting represent the existing journey of a user while Personas and Stakeholder Maps help to build up a profile of a typical customer.

The process of embedding Service Design can be complicated by many differing opinions on what constitutes a service provider. For instance, in FCC where they produce guidelines for the public, some staff may consider this a service, while others, due to the physical leaflet produced, may not. To facilitate a united understanding of what is actually being provided, it is often necessary to expand the perspective of what a service is. In the leaflet example, it can be argued that the service is the generation and capture of the knowledge within the leaflet which holds the true value, rather than the leaflet itself. In order to broaden the perceptions of the service, a combination of appropriate tools must be used which expand the concept of what the service is. Additional tools can then be used to explore what the service could be.

At FCC, each tool was carefully chosen to allow it to build upon its predecessor. Staff learned how to use each tool by directly applying them to their specific issue. The objective of using the initial SPIDER tool Framing: Context and Objectives, was to create an agreed consensus on the attributes of the current service, the key service users involved and the future aims of the service. This both broadened staffs perspective of what constitutes a service, and placed the Service Design process within the context of their own organisation. The second SPIDER tool, Service Concept: User Journeys, was used to capture the current service provision, including formal and informal processes from the front and back-office perspective. Solutions were then brainstormed and a draft of the potential solution presented through a second iteration of the Service Concept: User Journeys tool. This structured approach provided a logical and relatable structure to the Service Design process and allowed staff to see the potential for their own organisation.

At CIT, new tools were introduced to stakeholders and were well received and understood. Initial interaction at workshops was slow but improved later during the Customer Journey Mapping and Ideation workshops when users became more collaborative and focused on the common goal of a positive student experience. The innovative approach to break down barriers was to engage these stakeholders to draw up a Service Blueprint, viewed entirely from the end-user perspective. The use of Service Design techniques, in particular, Service Blueprinting can support this service view and aid in innovating and transforming the student experience within higher education (Bitner et al., 2012). The touchpoints were analysed and using swim-lanes, all front and back stage operations were identified and the features of the service were laid out, perhaps for the first time, in its totality. Service Blueprinting has been used in many projects at CIT, as the layout and simplicity of the tool allows participants to quickly map out the existing process by separating the front-stage and back-stage operations by way of a line of visibility.

5. Get the quick wins

A quick win is an improvement that is obvious, has instant impact, and can be delivered quickly. With any change initiative, achievable, short-term targets need to be set that, once accomplished, will motivate people to persist and keep trying. The celebration from quick-wins will create buy-in for future change projects. It is important to consider current work habits and communication styles of individuals and groups, and attempting to change these to leverage more sophisticated alternatives. Existing research seems to differ in relation to whether a change initiative should start as a small scale innovation or a large-scale cultural transformation. Change takes time and should be nurtured over a number of years and it is important to note that the public sector does not have the resources to deal with an all-or-nothing approach. These small quick-wins must have the support of management otherwise they will fail. In the FCC case study, identifying bottlenecks in the customer journey which could be quickly remedied through well thought out signage offered a simple but effective quick win. Similarly, brainstorming ways to encourage community engagement through an adaptive space also proved fruitful. This space could be quickly and easily adapted to provide private meeting spaces, a display space for local community groups or FCC developments. The adaptability of the space allowed sustainable engagement to fulfilling customer needs.

At CIT, some simple quick wins included training for front-line staff and department managers and sending information to new students by email rather than by post. Other changes included a new campus map, improved signage for our IT helpdesk, which many students previously did not know existed, and a new virtual campus tour. A QuickStart guide was designed and implemented in both online and printed formats. There was a step-by-step journey required for new students to become in class, ready for learning and each step contained short two-minute how-to videos such as how to enrol for modules online. Many staff members also found these guides useful.

6. Plan to measure your success

Evaluating the effectiveness of services can be difficult as certain elements are simply a matter of opinion. For example, how do you measure the atmosphere of a restaurant or the approachability of staff? In

order to measure the success of any project, there is a need to collect baseline data in a planned and structured way. It is important to consider what is being evaluated (e.g. efficiency, customer experience, customer loyalty, adaptability), how best to evaluate it (e.g. surveys, focus groups, workshops, service blueprinting) and when is it most appropriate to gather the data (e.g. immediately after the service, annually, at the front-office).

At FCC, staff were keen to gather feedback on the new service and structure changes. A feedback box was already placed at the reception, but had limited use, either because of its location or the format of feedback (customers were unwilling to complete the slip). Instead, staff proposed to proactively seek feedback through direct engagement with customers. Front-line staff were asked to informally gather information from customers during the service. This was supported through a suggestions box, placed in a prominent position in the foyer. Trends, both positive and negative, would be gathered and shared back to management to allow amendments if necessary.

At CIT, there were some obvious efficiencies and triumphs such as queues at the part-time office being reduced by 50 per cent on the previous year and student portal traffic up by 14 per cent mainly because students were now being directed online to find key information. Opening hours of central services were extended until 7:00pm when most part-time students were on campus. The Kick-Off @ CIT fold-out guide that was produced for part-time students, with information on contact details, key calendar dates, FAQs and library information, was a huge success. This was used as part of a new induction process that was introduced for part-time students and not only did new students benefit from it but part-time staff also found the information invaluable. Everyone now had the right information at the right time.

Conclusion
Although Service Design can help organisations to design and implement new kinds of value in the public sector, the transition to using its tools and approaches can be difficult. The aim is to ensure that the Service Design process used to implement change becomes how we do things rather than a unique event. It is important to embed design thinking into the organisation but this cannot happen overnight and will take some time. Removing the initial barriers by reducing unfamiliar terminology and using an appropriate toolset, allows Service Design to be placed in the context of the organisation. Its use within the public sector is then clearer, and staff are more comfortable using it to both generate and implement ideas. Involvement of staff at all levels, from management to front-line, ensures that the service is understood in its entirety, and the support is there to implement true change in a collaborative way. In the short term, quick wins provide incentives to continue with the process, despite any challenges which may occur. In the long term, evaluation provides feedback on improvements from the larger customer market, while highlighting any service elements which still may require change.

> "The celebration from quick-wins will create buy-in for future change projects. It is important to consider current work habits and communication styles of individuals and groups, and attempt to change these to leverage more sophisticated alternatives"

Using an Action Research Approach to Embed Service Design in a Higher Education Institution

Universities suffer from tired structures, heavy bureaucracy and little incentives for innovative approaches. Can Design Thinking and Service Design help create a more innovative culture?

ABSTRACT

Design Thinking can address the political and cultural divides in higher education and improve the focus on student experience. The challenge is reshaping a traditional organisation into a more modern one and at the same time creating an environment that is favourable towards change brought about by design-led thinking.

In one higher education institution, almost two years into the journey and despite some challenges along the way, Service Design methods are demonstrating their capacity to change the processes and procedures that support the delivery of student services in higher education.

An action research approach is currently being used to assess how the tools of Design Thinking are applied to real organisational problems and the consequences of design-led action. This research introduces a new set of tools and techniques to an organisation and analyses the effects of this fresh approach on the organisation via a number of action research cycles. There are many stages on the road to introduce Design Thinking as a bottom-up approach to changing an organisation into a more innovative, progressive, efficient and user-centred one.

Introduction

Cork Institute of Technology (CIT) is a publicly funded higher education provider. It is the largest of Ireland's network of thirteen Institutes of Technology and currently has in the region of 15,000

> **"** The collaborative process of co-design immerses participants in new ways of thinking and encourages prototyping and taking risks (...)

registered students. CIT, like many higher education institutions, faces many challenges that come with the day-to-day running of a large organisation. Bringing cross-functional teams together to define problems, brainstorm and design solutions is not always an easy task because of the academic calendar and its cycles of demanding administrative processing. In higher education institutions, things happen because "we have always done it this way" and it can be difficult to introduce a new approach to solving problems.

Service Design is an approach that CIT are investigating to foster creativity among existing employees and teams by allowing more participation in co-creation and co-design workshops. Service Design can help to examine the underlying causes of many existing process bottlenecks which are often a symptom of poor communication, information silos and manual paper-based tasks. Service Design can also help to tackle some of the more traditional barriers to change such as top-down support, complex processes and risk aversion.

As indicated by Parker and Parker (2007) there is not much incentive to adopt innovative approaches in the public sector and few managers are motivated to keep up best practice or make savings. It can be argued that many of the problems that exist in public sector organisations are associated with their tiered structure, bureaucratic nature and management style (Basadur, 2004; Claver et al., 1999) which leads to inaction, rigid methods and a lack of new ideas. Service Design offers the potential to address these problems and this paper seeks to articulate the value of a design-led approach to innovation. Service Design can overcome existing barriers by esta-

blishing trust and building relationships, encouraging a culture of openness and developing a shared understanding of the current situation (Yee et al., 2015). The collaborative process of co-design immerses participants in new ways of thinking and encourages prototyping, taking risks, trying out ideas and making mistakes. Experimentation and failure are welcome in the design process.

At present, in the public sector, Bailey et al., (2014) have found that a great deal of Service Design happens without any professional or practical design input, which is what needs addressing. Some examples of how Design Thinking has been used to solve problems in the public sector include Lewisham Council where a learn-by-doing approach was used and front-line staff were equipped with tools and techniques in order to discover and fix real problems (Design Council, 2013). The cultural change was significant and proved that utilising co-design to engage staff can make them more empathetic with customers. The Alberta CoLab are a team of public servants striving to promote innovation inside a large public sector organisation, Canada's Department of Energy, and believe that by demonstrating to subordinates about what to do and why, will eventually be a means to overcome bureaucracy (Ryan, 2016). Significantly one that has to be mentioned, as it was the inspiration for research at CIT, is the JISC Enrolment Project in conjunction with University of Derby. They used a Service Design approach to improve the student experience from pre-entry to 'readiness for learning'. Baranova et al., (2010) discovered that rather than assuming they knew what the student wanted, they 'actively sought their input as end-user designers and co-producers of their own student experience'.

The aim of this research as part of a larger Professional Doctorate is to assess if Design Thinking can be used as an approach to analyse and improve services at each stage of the student lifecycle and embed this approach as a long-term sustainable change enabler in the higher education service system.

The action research cycles documented in this paper aim to answer the following questions:

1. How can Design Thinking influence existing culture?
2. How can leadership support, or hinder, the design process as a new way of working?
3. In what ways can Service Design tools and techniques help an organisation be collaborative and innovative?

Theoretical Framework

In any organisation, open conversation and communication can often be the essential small strides towards bigger change. Design Thinking can help organisations to innovate; enabling people to think outside the box and become more creative in solving everyday problems. The crux of this research is to discover how to embed a new way of thinking and doing while meeting resistance and challenges. In this paper some of the reasons behind this resistance are uncovered while trying to encourage people to collaborate towards a better student and staff experience and leave organisational politics to one side.

Design Thinking is a common set of design practices that applies across many disciplines including product design, industrial design, information design and of course service design. Design Thinking is an approach to problem solving that requires a natural sense of curiosity, discovery and questioning. It is human-centred and empathetic and the end-users are always involved in the design process. Service Design is a set of tools and techniques that may be appropriate in some design contexts. It is a different application of Design Thinking that

7 The problem with Service Design seems to be the difficulty in selling it to the organisation and designers themselves find it difficult to explain what Service Design really is"

focuses on the customer experience of a service within an organisation. There is an area of overlap between Design Thinking and Service Design; both require thinking like a designer and translating ideas into reality.

In the context of this research, Design Thinking will be used to describe a general bottom-up approach to innovation and transformation with the goal of solving problems. Service Design will refer to the set of tools and techniques, such as Service Blueprinting and Customer Journey Mapping, which will help to solve those problems by making the services delivered more useful, usable, efficient and student-centred. There are a number of challenges with introducing a new methodology and Service Design does not happen in isolation. It involves changing mind-set, reframing problems, changing existing work practices, encouraging more collaborative cross-functional activities and ultimately cultivating a more human-centred creative culture.

Traditional improvement methodologies such as Lean, Systems Thinking and Nudge, are more focused on operational improvement while uniquely Service Design involves the user in any embedded innovation. Whicher et al (2013) indicate the high-level differences between these different methods where Service Design occurs at the 'interface with the user' and Lean and Co-production focus on more efficient operations. Snook (2012) emphasise the key differences as process driven versus experience driven. The involvement of the user in the design process is also a fundamental difference and Carr (2012) argues that Lean is too systematic and unfeeling, focused on eliminating waste and cutting disparity.

Fear of Design
The problem with Service Design seems

to be the difficulty in selling it to the organisation and designers themselves find it difficult to explain what Service Design really is. Brown (2009) observed that he spent far more time explaining and justifying to clients what design was rather than really doing it. Kimbell (2011) acknowledges that even those that support the application of Design Thinking have difficulty explaining it. Non-designers feel uncomfortable with the flexible non-linear approach that Service Design brings (Marino, 2011). Martin (2007) maintains that many business leaders find the lack of structure and predictable outcomes hard to deal with and they have difficulty understanding the language of design. The word design can often bring a sense of mystery to a process and the challenge then is to encourage employees not to be afraid of design and eliminate the perception that they have to be highly creative people to use design tools and techniques. Bailey (2012) questions whether a service designer is required to be design trained and argues that the tools and methods available are not unique to designers and most people can embrace them effectively.

Open to change
Akama and Prendiville (2013) articulate that co-designing is not just collaborating using a set of tools and techniques but about an openness to take-on all the influences, challenges, fears and risks that come with a change project in a culturally stuck organisation. They argue that design researchers have a responsibility to tell the 'swampy' (Schön, 1983) stories of what really happens when trying to change and design existing services. Indeed Akama (2009) points out that Service Design 'stories' do not document the complex realities and tend to oversimplify the human-centred and operational

issues that are forefront in undertaking any design project. Ultimately no new tool or technique can 'change the relationship between service providers and users' without considering processes, knock-on effects and outcomes (Maffei et al., 2013). Significantly Hartley (2005) recognises that the innovations which fail are just as important as those that succeed as they help us to understand how innovation is cultivated, supported and embedded. She also recognises that innovators or change leaders more often come from 'bottom-up' or 'sideways-in' rather than top-down perhaps as they are experiencing the failures and inefficiencies first-hand.

Culture: 'how we do things around here'
Much of the existing literature does not demonstrate how to entrench design tools within an organisation, where employees prefer the familiarity of their current way of doing things, even if that current approach lacks efficiency. Buchanan (2007) suggests that an organisation needs more than enthusiasm to embed design as a discipline of thinking and making. The tangible benefits will have to be clear to actors at all levels of the organisation if Design Thinking is here to stay. However, Gouillart (2014) posits the view that it is the compelling enthusiasm derived from using Design Thinking along with bottom-up and outside-in techniques, that motivates senior management to steer a different course.

Cooper et al., (2013) suggest that in order for design to be truly successful, it must focus on both process and outcomes and embedding design in any organisation requires an expansive approach that looks at the whole situation and includes a broad range of stakeholders. Lockwood et al., (2012) agree that an organisation needs to cultivate and encourage positivity and creativity by delegating the process of problem solving to a wide group of employees. Many authors have come across a silo approach where employees are not encouraged to think outside their own specific activities and

in order to change this, Design Thinking will need to 'permeate to the core' while encouraging initiative and risk-taking (Parker and Heapy, 2006; Wechsler, 2012). A number of authors contend that selecting the right people for a design activity is an important feature for success (Von Stamm, 2008; Matthews et al, 2012).

The term Design Thinking can sometimes create mystery and uncertainty, and rather than trying to sell Design Thinking as a new approach, the focus should be on the benefits it brings; the outcomes should speak for themselves. Human needs are fundamental to Design Thinking and these needs should drive innovation. Having the right people involved is essential, people who understand the need for change, and can be empathetic towards the users. This authors approach does not just concentrate on using design as a once-off change enabler but embedding design as a stepping stone towards real change.

Methodology

Service Design tools and methods are well aligned with qualitative research as both are holistic and creative processes that require intense contact within a real-life setting. The researcher is usually interested in analysing people's views, mind-sets and behaviours and the research tends to be subjective in nature. This research is collaborative rather than subjective as the researcher is jointly focused on fostering change with people across the institution.

Action research is a form of organisational learning as it is a process of problem solving that can help a group of employees to improve what they are doing or appreciate it in new ways (Patton, 2014). It is the ambition of this research that people that participate in an action research cycle will learn to question what they are doing, why they are doing it and think more systematically about daily functions and operations. Employees will learn new tools and methods to enable them to look at all aspects of their work within the organisation and become more innovative with

Action Research Methods

Survey
Observation
Facilitation
Journal & Log Book
Photographs
Checklists
Group dicussion
Group Feedback Analysis
Brainstorming
Document Analysis
Interviews
Shadowing
Workshops

Service Design Tools

Idea Generation
User Stories
DeBono
PMI
Service Blueprinting
Journey Mapping
Personas
Co-creation
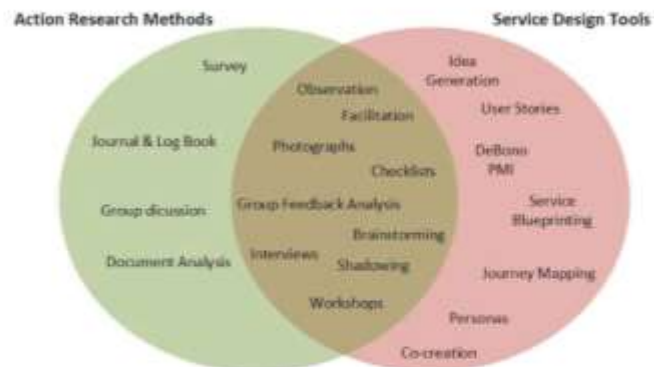
Figure 1:
Overlap of Action Research Methods and Service Design Tools

regard to changing 'how we do things around here', building a bridge between working and innovating (Brown and Duguid, 1991).

Developing one's own practice and the practice of the organisation that one is immersed in is the main focus of action research whilst gaining new knowledge (Candy, 2006). It looks to make collaborative change by means of participation and action. Traditional research is generally conducted from the outside while with action research the researcher is inside the situation and will have an influence on the outcomes. Costley et al., (2010) explain that as an insider, the researcher is in a unique position to study a situation or problem in depth but also has the insider knowledge which puts them in the crucial setting to investigate and make changes.

As this research involves solving existing problems, interventions and then making sense of the outcomes, abductive logic is most suitable as it allows for the generation of new knowledge, understanding and insight. Dorst (2010) maintains that when discussing Design Thinking, the basic reasoning pattern is abduction as the researcher is attempting to create value for others. Abductive logic is necessary for innovation to occur

where creative and intuitive thinkers can use their feeling and perception to deliver valuable outcomes. Charles Sander Peirce who coined the phrase abduction believed that new ideas did not come from traditional forms of logic and he posited that new ideas resulted from a thinker examining data. Brown (2009) concludes that designers use the tools of abductive reasoning to seek a balance between consistency and validity, between discovery and manipulation and between instinct and analytics.

For the purpose of this research paper, three action research cycles are documented to demonstrate how Service Design can influence positive outcomes which then leads to new knowledge and understanding of the consequences and challenges of embedding Design Thinking in an organisation of this kind. A variety of methods were used throughout this action research journey including document collection and analysis, participant observation, surveys, interviews and focus groups. The combination of these methods integrated with Service Design tools provides a powerful way to collect data. An example is that although focus groups may not tap into emotions (Krueger and Casey, 2008), using a tool such as customer journey mapping during a

focus group can help to empathise more with the user journey. In fact Whicher et al., (2013) highlight that Service Design tools allow better insights into customer behaviours, engages the users and provides a more human element to the action research. The diagram in figure one demonstrates the overlap between qualitative research methods and Service Design tools and techniques and although the two approaches are not on equal grounds, they do complement each other.

Findings

At CIT there are many disparate actors, systems and processes involved in service delivery and too often employees work in silos (*Parker and Heapy*, 2006; *Wechsler, 2012*) with little or no understanding of the personal impact of the student journey. Problems that exist include issues with data quality & timely availability, lack of online student self-service, isolated enterprise applications, and a disconnect between academic business process and the IT solutions needed to support them. Changing the culture of any organisation is a monumental task and at CIT this requires strong leadership and support along with a fresh approach and a novel original toolkit. An existing mind-set of "we have always done it this way" can hamper any new ideas if not handled in the right way. Employees are stretched to perform their daily activities which leaves little desire or time to experiment with new tools and prototype new ideas. The aspiration of this journey so far has been to evaluate how Design Thinking can be used to help solve internal issues that span several departments in CIT. Whether Service Design tools are exclusively used within an individual project or as part of a larger process, Design Thinking and in particular co-design has the potential to open up conversations. The exchange of knowledge between users of a service and the 'makers' of that service creates an opportunity to co-define the right problem or challenge in a collaborative way and make sure the outcome is

truly relevant. Co-design can enable this organisation to improve the efficiency and effectiveness of service operations while at the same time, delivering value to the end users; students and staff of the Institute.

Cycle 1: RECAP – Review and Enhancement of CIT's Admissions Processes

The problem

Part-time students received no formal induction and an absence of process integration across the various college functions in providing an induction resulted in pain for all involved, in particular front-line employees and students, recognised by Martin (2009). The 'service' needed to be redesigned so it was simpler for students and employees alike.

Design of Study

RECAP was a six month pilot project at CIT which proved that Service Design as an approach can help to improve how we do business with regard to the services we provide to customers. Shifting mind-set was a key objective of this cycle and demonstrating to the providers of a service, employees at CIT, how their cog and all the other cogs that are part of one cohesive process impact the student who should see a seamless series of touchpoints. The study was co-designed with Jean Mutton from the University of Derby based on their experience of using Service Design to improve the enrolment process for new students.

In preparation for September 2013, a broad range of staff (*Cooper et al., 2013; Lockwood et al., 2012*) that were involved with new part-time students were invited to co-design workshops to gather data and insights and map the current as-is process. The analysis was designed to be collaborative and inclusive and involve a wide range of staff including department managers, secretaries, and front-line staff from central student services. Part-time students were surveyed to ask them about their experience and then invited

to focus groups in order to contribute to the design process, as guided by Baranova et al., (2010). In fact one part-time student welcomed the chance: "thank you for the opportunity to give feedback, it is the first time I have been asked".

Actions taken

The part-time student journey was mapped out which highlighted all the fail and wait points in the process and the touchpoints were analysed using swim-lanes, all front and back stage operations were identified along with problems, opportunities and user needs. Evidence was gathered, ideas were brainstormed and interviews conducted with key stakeholders. The data was mostly qualitative and included surveys, artefacts, documents and interviews. Many unstructured interviews took place with participants such as the college caretakers who were often the first interaction for new part-time students when they arrived on campus. A number of CIT students were recruited as summer interns to help deliver some of the outcomes and actions.

Improvements included a new campus map which guided students to the right physical location while a QuickStart Guide was used as a step-by-step journey to become in class, ready for learning, with links to online video instructions and who to contact at each stage. New students felt the guide was clear and concise: "we had no issues following the eight steps, it was very straight-forward and the videos were really helpful". An in-class induction for new part-time students was delivered by student leaders where a Kick-Off @ CIT fold-out guide was handed out containing key calendar dates, contact details, library information and FAQ's. An obvious efficiency was the reduction of queues at the part-time office by 50 per cent on the previous year; staff revealed "we were wondering if something was wrong as there were no huge queues or volumes of email from students". Key services extended their opening hours until 7:00pm for the first three weeks of semester as suggested by part-time students.

Results

New tools were introduced to stakeholders and were well received and understood, demonstrating to participants that design is not to be feared (Marino, 2011). Initial interaction at workshops was slow but improved later during the Customer Journey Mapping and ideation workshops when users became more collaborative and focused on the common goal of a positive student experience. The innovative approach to break down barriers was, to engage these stakeholders to draw up a Service Blueprint, viewed entirely from the end-user perspective. The use of Service Design techniques, in particular Service Blueprinting, can support this service view and aid in innovating and transforming the student experience within higher education (Bitner et al., 2012).

As mentioned earlier, collaborative change became possible by means of participation and action as advised by Yee et al., (2015). Not only was the service for part-time students improved but both organisational and individual learning were facilitated by exposing the participants to new tools and techniques. A link between professional and personal learning was created which in turn leads to a positive attitude towards improvement. Workshop participants understood how Service Design tools on one project could be improved or altered for the next project. It was important to build on this momentum and provide suitable Service Design training to the eager participants.

Cycle 2: Service Design Master Class

The Problem

During the first cycle, it was understood that in order to embed Design Thinking within an organisation, the next step would be to get some willing supporters on board (Matthews et al., 2012; Von Stamm, 2008). Although many managers have various ways of delivering change and benefits to students, it is believed that in order to embed Design Thinking as a new method, then a number of de-

sign champions would be instrumental. These design champions would need to be trained to use new tools and techniques. It was deemed important to focus more on the staff delivering the services and improve the back-stage processes which in turn will improve the student experience.

Design of Study

Two brainstorming sessions were held with a number of stakeholders and interested parties in CIT to deliberate the proposed master class and choose the right tools to demonstrate to a new Service Design community on the day. The Service Design Master Class was advertised to a wide Cork community across a range of sectors but it mainly sought to educate a number of CIT employees in Service Design tools and techniques. Many unstructured interviews took place in order to recruit potential champions from different areas across the organisation and to ensure that those attending were interested and open to a new way of working. The workshop was designed with members of the SPIDER European project (2015) who offered their experience of delivering Service Design training workshops to public sector employees. It was clear that participants should not be overloaded at the workshop but get an introduction to a new approach. The design challenge decided on was the purchase of a take-away coffee, which was felt to be generic enough to be understood by a diverse range of people. It was also deemed important to get participants to head out on the streets of Cork to meet potential users of the service, gather data and insights that would then feed into their re-design. As such the venue chosen for the event was CIT Wandesford Quay Gallery which offered inspiring creative surroundings as well as a central location.

Actions taken

The workshop provided a suite of tools to the participants to allow them to exploit their own knowledge, experience and creative potential resulting in the ability to

create relevant, innovative and practical solutions in their own work. The event was a multi-disciplinary creative and collaborative process bringing together all people engaged with a common challenge as suggested in the literature by Brown (2009). The event was also an opportunity to bring ten Service Design experts and mentors together who provided guidance and led the 45 participants in the design challenge. Participants worked in teams to frame the problem, map the user journey, brainstorm ideas and evaluate a solution for a take-away coffee experience.

Results

After the workshop, attendees were surveyed to gather valuable feedback. Participants were asked to identify highlights, low-lights, and suggest ways for improvement to help embed Design Thinking as a way of improving 'how we do things around here'. One attendee described his experience: "I came in with an open-mind, I had no idea what it was going to be like but it has been an eye-opener, it teaches you to take a step back and question why you are doing something".

The aim of the master class was to build on the individual learnings of employees in cycle one and encourage more active participation in change across the Institute. Although there was a great buzz and excitement (Gouillart, 2014) during and after the master class, the gusto generated did not continue back at the office of many participants. Feedback gathered was very positive and it was clear that participants enjoyed the tools and the collaborative experience they brought. They wanted to learn more and contribute to solving problems that not only affected their own area. They liked how Service Design offered a solution to real-world problems. They understood more about how services overlap several departments and need to be designed to facilitate better user experience. They learned about design concepts and enjoyed hearing other people's insights and interpretation of the design brief.

⁇ It is extremely important for the business owner to lead the change in parallel to the service designer facilitating the process of implementing it"

The wish of the researcher was that participants would take ideas and tools back to their day jobs with them to put them into practice, but the reality was very different. Once back in their offices, participants got caught up in the long list of operational duties that left little space for improvement and innovation (Parker and Heapy, 2006; Wechsler, 2012).

Cycle 3: RIO (Registration, Induction, Orientation)

The problem
The purpose of RIO was to review the Registration, Induction and Orientation (RIO) experience for all new students. It was an action research cycle that came about as a result of implementation of the first cycle, RECAP, which looked at introducing a better experience for new part-time students. The plan was to influence the organisers and planners (Hartley, 2005) and those delivering induction to new students to focus on the experience across the all various touchpoints irrespective of department ownership. It was important to improve cross-silo communication and create a vision of student experience. The ultimate goal was to use co-design methods to improve existing services by means of an iterative process of understanding the student context, observation, stakeholder analysis, building prototypes and designing a new experience as was previously demonstrated by public sector organisations such as Lewisham Council, Alberta CoLab and University of Derby.

Design of Study
In June 2014, a RIO working group was setup to plan, design and implement a consistent experience for all new

students and to review all communications and materials, both printed and online, for all students. The first thing that needed to happen was to organise a collaborative focus group to uncover what employees understood from each of the terms registration, induction and orientation. Brainstorming was used to determine what new students needed to know before they arrived, when they arrived and after they arrived, on campus. A further focus group was held to take that data from the first workshop and organise it into a sequence of events and logical groups, while coming up with new terms or labels and objectives of each category.

Actions taken
During the September 2014 registration, induction and orientation period, data was gathered, processes were observed and discussions took place. DeBono's 'Positive Minus Interesting' tool was used to analyse the September 2014 experience. All aspects of the registration, induction and orientation experience were examined including department talks, IT induction, walking tours and the registration process which included the processing of paper forms and production of CIT smartcards. Key staff members involved across the entire process were interviewed in order to understand their inputs and the expected outputs. It was not surprising to discover that each department had unique procedures and a culture of focusing on their part of the process. One administrator divulged "we try to communicate with them (new students) face-to-face or by phone, we don't trust them to read their emails" while another co-ordinator told how "new students might not check email

so we need to post information". These findings suggested that the present service needed to be reorganised.

Results
The results and data were analysed and collated and revealed that whatever students needed to know, staff did not have a clear understanding of the existing process. Initially when the RIO working group first met, there was a lot of confusion due to a lack of communication across departments. As RIO was seen to overlap several departments, there was unclear ownership and the first meeting revealed frustration and inefficiency. It is extremely important for the business owner to lead the change in parallel to the service designer facilitating the process of implementing it. It became clear during this cycle that in order for change to stick, it is critical for the front-stage and back-stage staff to be completely engaged with the process. This is not an easy task and visibly employees are so burdened with their day-to-day job, they do not have time to consider broken processes. This is when the business owner or department manager must enable space and time for continuous improvement.

As mentioned by Akama and Prendiville (2013) it is important for design researchers to tell the real stories and the difficulties encountered on the ground. This cycle only reached the discover and define phases and it was obvious that while Service Design tools can open doors, no change could happen when the following barriers existed:

- No obvious process owner
- Lack of management engagement and support for the change
- A working group that lacked steering and direction
- Change of staff and key staff members leaving
- Political and cultural divides that remove focus from the student experience
- Lack of time and resources given to

design and improvement activities
- No incentive to improve the process
- Isolation of various processes & tasks within different departments
- No holistic view of all new students and their first experience

Discussion

The use of Service Design tools and techniques as an investigative approach to discovering, defining and resolving existing problems in higher education administration is in itself a contribution to knowledge. Investigating the practice of how things are done with a Service Design lens is a new approach in this institution and will form a novel way of identifying problems and challenges, the needs of those delivering and owning services, but primarily the requirements of those receiving services from the Institute. The problems being investigated are real-world problems that occur in every higher education institution across the world and the approach of practice-led research to solve real-world problems can lead to genuine change if given enough space.

Three action research cycles were documented and Service Design is having an impact in changing this organisation although that impact is slow and there are a number of limitations that need to be addressed. The change agent in this case was the researcher that was setting out to facilitate a change process using a number of tools and techniques. If the need for change only emanates from the researcher's practical experience and knowledge as opposed to the collective organisation's experience then a number of challenges ensue.

Limitations & Challenges
Can Design Thinking influence existing culture?

Existing Culture: Many authors including Tjendra (2013) tell you what you need to embed a design culture including top-down advocates, front-line employees who are empowered

An important Service Design tool is prototyping.

and fired-up, and a process champion who has a strong design motivation, but the discussion about how to do this in a higher education organisation is missing. The RECAP cycle struggled to embed a design culture and many of the changes did not stick when the following cycle of part-time registration came around. Although there was no major cultural change, the tools did allow for collaboration and innovation by delivering a number of quick-wins.

Silo Mentality: Mulgan (2007) proposes that 'high walls' in organisations divide people and departments and Snook (2014) identify that Service Design needs to deliver innovation across silos but is often prevented because of separate department strategies and budgets. It has conclusively been shown that organisation silos have a huge impact on change and are a constant stumbling block as iterated by (Von Stamm, 2008; Beckman & Barry, 2007). During cycle one, the ownership of the process was unclear as it intersected departments and this directly

resulted in poor student experience. Changing structures and ownership of services in an organisation can be politically difficult but the hope is that Service Design will influence departments delivering services to work together to focus on the end user. The aim was to move away from a silo-based approach to delivering services and to focus on the whole experience of students. In the short-term, this new methodology will help to deliver improvements in a new way but the aim of changing the culture and embedding a design process is long-term experiment.

Can leadership support, or hinder, the design process as a new way of working?

Getting management buy-in is difficult: At CIT, the initial requirement for change came from employees who were frustrated with existing processes and the downstream inefficiencies they created. The key problem in higher education is that many managers are under

References

Akama, Y. (2009), "Warts-and-all: the real practice of service design", paper presented to the First Nordic Conference on Service Design and Service Innovation, Oslo, 24th – 26th November, viewed 25 May 2016, <http://servdes.org/pdf/2009/akama.pdf>

Akama, Y. and Prendiville, A. (2013), "Embodying, enacting and entangling design: A phenomenological view to co-designing services", Swedish Design Research Journal, vol. 1, 29 40, available at: <http://www.svid.se/en/Research/Design-Research-Journal/>

Bailey, J., Julier, J. and Kohut, T. (2014), Restarting Britain: Design and Public Services. Annual Review of Policy Design 2, 1 10, UK Design Commission, viewed 25 May 2016.

Bailey, S.G. (2012), "Embedding service design: the long and the short of it", paper presented to the ServDes 2012: Third Nordic Conference on Service Design and Service Innovation, Espoo, Finland, 8th – 10th February, viewed 25 May 2016, <http://servdes.org/pdf/2012/bailey.pdf>.

Baranova, P., Morrison, S. and Mutton, J. (2010), Service design in higher and further education. JISC Briefing Paper, viewed 25 May 2016.

Basadur, M. (2004), "Leading others to think innovatively together: Creative leadership". The Leadership Quarterly, Vol. 15, pp. 103 121.

Beckman, S.L. and Barry, M. (2007), "Innovation as a learning process: Embedding design thinking", California Management Review, Vol. 50 No. 1, pp. 25.

Bitner, M.J., Ostrom, A.L. and Morgan, F.N. (2008), "Service blueprinting: a practical technique for service innovation", California Management Review, Vol. 50 No.3, pp. 66.

Brown, J.S. and Duguid, P. (1991), "Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation", Organization Science, Vol. 2 No.1, pp. 40 57.

Brown, T. (2009), Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation. HarperBusiness, New York.

Buchanan, R. (2007), "Introduction: Design and Organizational Change", Design Issues, Vol. 24 No. 1, pp. 2–9.

Candy, L. (2006), Practice based research: A guide, CCS Report, University of Technology, Sydney.

Carr, V.L. (2012), "LEAN and Service Design: Understanding the differences", available at: http://wearesnook.com/snook/?p=5295 (Accessed: 3 April 2016).

Clay, A. (2013), "5 Tips for Growing Changemaking Communities in Your Company", available at: http://www.fastcoexist.com/3023052/5-tips-for-growing-changemaking-communities-in-your-company (Accessed: 3 April 2016).

Cooper, R., Junginger, S. and Lockwood, T. (2013), The Handbook of Design Management, A&C Black, Berg Publishers, U.K.

Design Council (2013), Design for Public Good, Annual Review of Policy Design, European Commission.

Dorst, K. (2010), "The nature of Design thinking", paper presenter to the 8th Design Thinking Research Symposium (DTRS8), Sydney, 19th - 20th October, viewed 25 May 2016, <http://bbcdoorndes.weebly.com/uploads/1/1/8/6/11866691/dtrs8_proceedings.pdf>

Gouillart, F.J. (2014), "The race to implement co-creation of value with stakeholders: five approaches to competitive advantage", Strategy & Leadership, Vol. 42 No.1, pp. 2–8.

Gray, D.E. (2009), Doing Research in the Real World, Second Edition, SAGE Publications Ltd, Los Angeles.

Hartley, J. (2005), "Innovation in Governance and Public Services: Past and Present", Public Money and Management, Vol. 25 No. 1, pp. 27 34.

Kimbell, L. (2011), "Rethinking Design Thinking: Part I", Design and Culture: The Journal of the Design Studies Forum, Vol. 3 No. 3, pp. 285-306.

Kimbell, L. (2010), "Design leads us where exactly? Service design at a crossroads", presented as a keynote speech at Service Design Network Conference, Berlin, 14th October, viewed 25 May 2016, <http://designleadership.blogspot.ie/2010/10/service-design-at-crossroads.html>.

FORSKNING

> ❝❞ Traditional improvement methodologies such as Lean, Systems Thinking and Nudge, are more focused on operational improvement while uniquely Service Design involves the user in any embedded innovation."

Krueger, R.A. and Casey, M.A. (2008), Focus Groups: A Practical Guide for Applied Research, 4th edition, SAGE Publications, Los Angeles.

Liedtka, J. (2011), "Learning to use design thinking tools for successful innovation", Strategy & Leadership, Vol. 39 No. 5, pp. 13–19.

Lockwood, J., Smith, M. and McAra-McWilliam, I. (2012), "Work-well: creating a culture of innovation through design", presented at Leading Innovation through Design: DMI 2012 International Research Conference, Boston, viewed 25 May 2016, <http://radar.gsa.ac.uk/2935/1/2012_DMI_ResearchConf_Paper_Revised.pdf>

Maffei, S., Villari, B. and Foglieni, F. (2013), "Evaluation by Design for Public Services", Swedish Design Research Journal, Vol. 1 No.13, available at: <http://www.svid.se/en/Research/Design-Research-Journal/>

Marino, M. (2011), "Creating a Framework for Organisations New to Service Design", Touchpoint: The Journal of Service Design, Vol. 3 No. 2.

Martin, R. (2007), "Design and business: why can't we be friends?", Journal of Business Strategy, Vol. 28 No.4, pp. 6–12, available at: <https://rogerlmartin.com/docs/default-source/Articles/designandbusiness.pdf?sfvrsn=2>

Martin, R.L. (2009), Design of Business: Why Design Thinking is the Next Competitive Advantage. Harvard Business Review Press, Boston, USA.

Matthews, J.H., Bucolo, S. and Wrigley, C. (2012), "Challenges and opportunities in the journey of the design-led innovation champions", presented at Leading Innovation through Design: DMI 2012 International Research Conference, Boston, viewed 25 May 2016 <http://eprints.qut.edu.au/53946/>

McNiff, J. and Whitehead, J. (2009), You and Your Action Research Project, Routledge, London.

Miller, K. and Moultrie, J. (2013), "Understanding the Skills of Design Leaders", Design Management Journal, Vol. 8 No. 1, pp. 35–51.

Mulgan, G. (2007), Ready or Not? Taking Innovation in the Public Sector Seriously, NESTA, London.

Parker, S. and Heapy, J. (2006), The Journey to the Interface: How public service design can connect users to reform. Engine Design, Demos, London, available at: <http://www.demos.co.uk/files/journeytotheinterface.pdf>

Parker, S. and Parker, S. (2007), Unlocking innovation: why citizens hold the key to public service reform, Demos, London, available at: <http://www.demos.co.uk/files/Unlocking%20innovation.pdf>

Ryan, A. (2016), "The Alberta CoLab Story: Redesigning the policy development process in government", available at: <https://medium.com/the-overlap/the-alberta-colab-story-2d409ecf747d#.paw2oxsrl>

Schön, D.A. (1983), The Reflective Practitioner: How Professionals Think in Action, Basic Books, London.

Sherman, R.R. and Webb, R.B. (1988), Qualitative Research in Education: Focus and Methods. Psychology Press, London. Snook and Design Managers Australia (2014), Service Design Principles for Working with the Public Sector, available at: <http://designmanagers.com.au/wp-content/uploads/2014/06/dma_snook_article.pdf>

The SPIDER Project (2015), Supporting Public Service Innovation using Design in European Regions, available at: http://www.thespiderproject.eu/

Tjendra, J. (2013), Innovation Excellence. Why Design Thinking Will Fail. Available at: http://www.innovationexcellence.com/blog/2013/02/25/why-design-thinking-will-fail/

Von Stamm, B. (2008), Managing Innovation, Design and Creativity, 2nd edition, Wiley, Chichester, UK.

Wechsler, J. (2012), "Reflections on service design, frameworks, and the service organization", Design Management Review, Vol. 23 No. 2, pp. 58–64.

Whicher, A., Swiatek, P. and Cawood, G. (2013), An Overview of Service Design for the Private and Public Sectors, Sharing Experience Europe; European Commission.

Yee, J., White, H. and Lennon, L. (2015), Valuing Design: mapping design impact and value in six public and 3rd sector projects. UK Arts and Humanities Research Council.