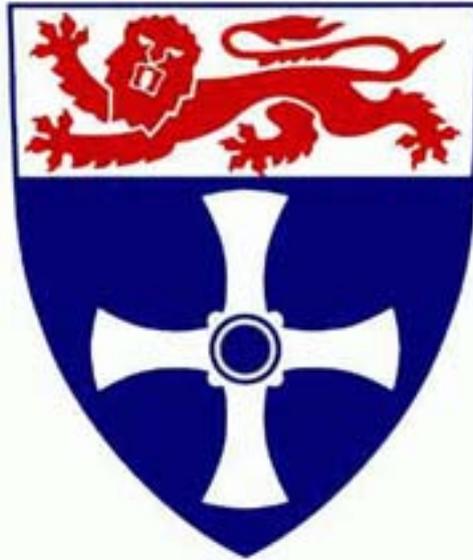


UNIVERSITY OF
NEWCASTLE



**A Report on Lean at the University of
St Andrews**

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Executive Summary

Background – The University of St Andrews has been implementing the philosophy of Lean for a number of years with various degrees of success. As part of a drive for enhanced efficiency and effectiveness, changing the culture of the traditional, hierarchical institution has proven more difficult in some areas than others. The University have several members of the senior management team on board, and have their own dedicated Lean Team consisting of two permanent members and one member on secondment. The Team conduct Lean Blitzes to improve processes through 5 day events. The need for new approaches to management in Higher Education Institutions is topical at present as a result of the increasing political and economic pressures on Institutions, and following recent research by the Higher Education Funding Council for England (and subsequent Scottish Funding Council). This research is based on a case study of 22 individuals from across the University who were interviewed using a semi-structured approach.

Results – The results show that Lean has come a long way since it began. On the positive side individuals feel increasingly empowered in their job, with enhanced networking and collaborative opportunities as a result of Lean Events. On the negative side many individuals perceive there to be too little training and development, mismatched communication, varying different management styles which have potentially negative impacts and little feeling of owning the process. Lean Events are considered to be helpful and crucial in some areas, however are drastically in need of a redesign in order to create sustainability in the future. The results indicate that the University are in fact deploying the tool of Business Process Re-engineering, as opposed to the philosophy of Lean. This is due to a lack of holistic approach to improving the entire business process, and lack to training and development needed to create a continuous improvement environment and individuals.

Recommendations – It is recommended that the Lean Team particularly focus on redesigning their current Blitz. A new model has been recommended, along with a new structure for delivering training. It is also advised that Lean is re-branded within the University as part of a system wide avocation of this approach. Moreover, approaches to process improvement must be more individualised with better integration of line managers taking ownership in order to enhance communication and buy-in. The Lean Team is recommended to consider relocation from College Gate in order to enhance impartiality, and to consider expanding their portfolio in the long term by considering consultancy within industry. It is suggested that the Team now focus on the “soft” side as opposed to the process side.

Originality – This report offers specific recommendations and redesign based on the Universities needs and results of the interviews.

Limitations – The findings presented cannot be generalised as they are formed on the basis of the 22 individuals’ interviewed and on any necessary supporting evidence.

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I would also like to thank my research supervisors at the University Of Newcastle Business School; Professor Stephen Proctor and Dr Tracy Scurry, for their guidance, leadership and continued support throughout the entire research process. Finally thanks to Nissan Motor Manufacturing (UK) for advice and guidance on Lean tools, methodologies and techniques.



1.0 PART ONE - INTRODUCTION

The research for this report was carried out by Emma Thirkell of the University of Newcastle on behalf of the Lean Team of St Andrews University. The research took place between 26th May 2010 and 28th May 2010, as part of Emma's PhD thesis. The research consisted of 22 interviews with a range of individuals across the University of St Andrews (*Appendix 1*). These individuals were from varying different levels within the organisation, and consisted of front line staff (including administration), middle and line managers, a Head of School, a Financial Director and a Vice Principal. Interviews lasted between 34mins and 56mins, with participation in them being on a voluntary basis. Written and signed consent was attained prior to each interview commencing.

Participants were questioned on a wide range of issues, including (but not limited to);

- their understanding of the Lean concept;
- their perceptions before and after engagement in Lean activity;
- their experience to date;
- roles of line managers;
- communication, teamwork and collaboration;
- the role of the Lean Team;
- the future of Lean within their unit/department and the University as a whole.

The aim of this report is to present the findings, and highlight alternatives to the current implementation where applicable. Finally, the report will present recommendations based on the evidence provided.

It must be noted that throughout the report, there will be direct reference to quotations from individuals interviewed. However, these are entirely anonymous, and no reference to the author of the quotation will be given. Authors have been coded by the researcher into “higher” and “lower” levels of the hierarchy, however this coding process will remain undisclosed to protect the identity of those involved. All quotes are taken directly from the transcripts of the individual interviewees, no words or text has been added unless otherwise stated. It must also be noted that the quotes, thoughts and opinions cannot be generalised throughout the University of St Andrews, and apply only to the selection of 22 individuals interviewed throughout this research.

1.1 Situational Analysis

In order to fully understand a) the need for Lean in Higher Education, b) the situation within the University of St Andrews and c) the definition of Lean, it is necessary to carry out a “situational analysis”. This section aims to establish the key challenges presented to Higher Education currently, the position which Universities are facing, the context of St Andrews University, and finally present the principles of Lean in terms of the academic literature.

1.1.1 Higher Education

The position of Higher Education Institutions (HEIs) within the United Kingdom has always been prominent, with many historical reforms taking place over time. On 22nd January 2003 the White Paper¹ entitled “*The Future of Higher Education*” was published which established the Labour Governments plans to radically reform HEIs. This was subsequently followed by the “*Widening Participation*” report which outlined four key areas in which the Government proposed to help promote Higher Education (HE); attainment, application, aspiration and admissions (Department for Business & Innovation Skills; 2010).

It was estimated that Universities were key to the national economy between 1999 and 2000 generating directly and indirectly over £34.8 billion of output and over 562,000 full time equivalent jobs throughout the economy. This is equivalent to 2.7 per cent of the UK workforce in employment (Department for Education and Skills; 2003).

Research was also considered vital, suggesting that UK research output was second only to that of the USA over the last 50 (now 57) years, with high levels of collaboration with Europeans partners and institutions.

However, even in 2003, the Government identified some of the major challenges as being the ability to “recruit, retain and reward the calibre of academic staff needed to sustain and improve both teaching and research²” as well as strengthen organisational structure. Seven years later the need for these aspirations are never stronger, with the Higher Education Funding Council for England (HEFCE) producing a variety of reports and publications in the light of the recession and recent changes to funding.

HEFCE³ suggest that the nature of demand for knowledge and learning, coupled with the effects of information technology on the delivery of HE services, the sheer number of competitors and (vitally) the change in nature of public funding is all redefining the business of HE. They suggest that HEIs must make fundamental changes in terms of capabilities in order to succeed, implying;

“major changes in the nature of work in HEIs, in the skills and behaviours needed from academic, professional and supporting staff, and in the ways that people work together, both with their colleagues and with students, business and other external stakeholders.”

(HEFCE; 2010)

¹ Further information, and for access to the White Paper visit

<http://webarchive.nationalarchives.gov.uk/20100210151716/dcsf.gov.uk/hegateway/uploads/white%20pape.pdf>

² <http://webarchive.nationalarchives.gov.uk/20100210151716/dcsf.gov.uk/hegateway/uploads/white%20pape.pdf>

³ Report available at http://www.hefce.ac.uk/pubs/rdreports/2010/rd03_10/rd03_10.pdf

This has resulted in an increasing, and fundamental need for the adoption of Lean techniques, most importantly not in terms of just operational efficiency, but also workforce planning. HEFCE propose 4 fundamental areas HEIs must concentrate on;

1. Enhancing the diversity of missions and strategies among HEIs in order to promote differentiation.
2. Diversifying organisational capabilities through the use of business models depending on the aim of the institution – HEFCE cite the following example;

“An institution seeking to extend its reputation (and income) from world-class research will need quite distinct capabilities from one focused on growing its business through employer-centred learning.”

3. Extensively use workforce capabilities, coupled with business and organisational models, to meet the changing needs and uncertainly ahead for HE. Agility and flexibility must be inbuilt into the system, and HEIs must make full use of their workforce’s core competences to aid this.
4. Develop sector-wide workforce frameworks such as staff development and leadership programmes.

But what does this mean? And more importantly what does this mean for the University of St Andrews? HEFCE state that strategic workforce planning, *“planning ahead to ensure that the right people with the right skills can work together in new ways”*, is paramount to the future of each HEIs. In order to meet this need, they suggest some key strategies.

Firstly HEIs must *“determine their critical organisational capabilities needed to establish and sustain the distinctive market identity and business strategy sought by the institution.”* This, of course, has workforce implications and implies strategies such as Lean, which focus on developing flexible employees around their core competences, is vital.

Secondly, HEIs must *“articulate these capabilities in terms of the required skills, capacity, relationships and behaviours for staff in academic, enterprise and professional/management roles, and assess current workforce strengths and weaknesses against these requirements.”* This indicates the growing importance of Continuous Improvement within everyone’s job and performance management.

Thirdly, HEI’s must *“establish the organisational models and processes for recruiting, developing and mobilising the staff needed to sustain strategic capabilities, with the flexibility to adapt to changes in strategic priorities over time.”* Here is where business models such as Lean (as opposed to Business Process Re-engineering) become key. Recruiting “yes candidates” who are developed through a learning culture enhances an organisations flexibility.

Fourthly, HEIs must *“provide the leadership, at all levels, to guide and motivate all staff to engage with new workforce models and to encourage high levels of commitment and performance.”* This highlights the increasing importance of the “Respect for People” and employee engagement aspect.

Finally, HEFCE assert that HEIs must be open to experience from outside consultants, or from people from business, who are familiar with such business models. Developing leadership from

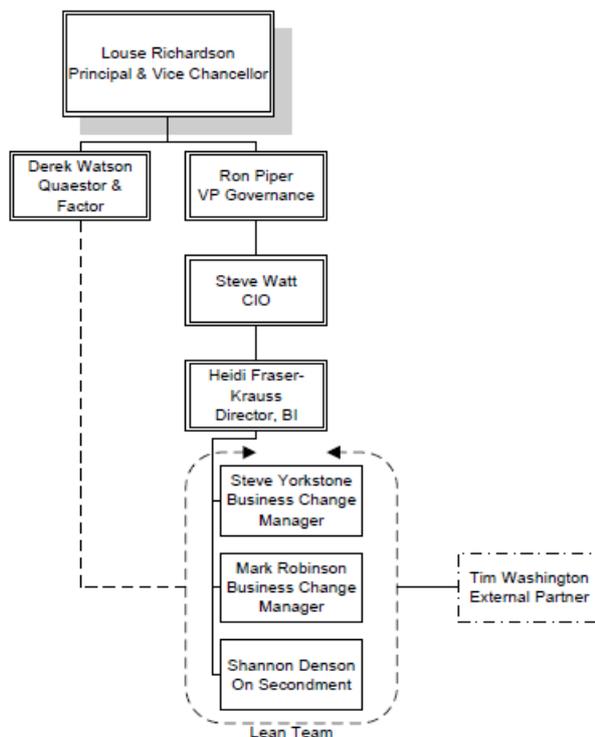
within, they assert, is not the sole answer to the continued success of HE.

So, is Lean the answer? Lean is a philosophy born in manufacturing, yet never more applicable to the future of HEIs than today, and not just in terms of operations, but in terms of the workforce.

*“Institutions must review their corporate structure and decision-making processes to ensure effective and responsive decision-making – potentially moving to structures that are both more devolved and **leaner**.”*

(HEFCE; 2010)

1.1.2 Organisational Structure



Lean within the University of St Andrews lies within the Business Improvement (BI) division, overseen by both the Vice Principle of Governance and the Quaestor & Factor as part of the Principals Office. The Principals Office consists of eight individuals who are responsible for various aspects of management including teaching and learning and research.

In terms of structure, the Team are directly responsible to the Director of BI who is also responsible for the likes of IT.

The Team work with an external consultant as and when needed; however remain almost completely autonomous within the structure of the University.

Figure 1- Position of Lean within the University of St Andrews. Source – Yorkstone, S. (2010)

1.1.3 Lean at St Andrews

“Lean strengthens the University of St Andrews' processes frees staff time & resources and builds a culture of continuous improvement.”

(Lean University, St Andrews)

Lean in the University of St Andrews⁴ started in 2006 (with the help of Bourton Consultancy Group) aiming to help the University maintain and increase its excellent reputation for teaching and

⁴ All facts, information and figures taken directly from the Lean University website, available at <http://www.st-andrews.ac.uk/lean/>

research and to uphold the Universities motto of “AIEN ARISTEUEIN”, translated as “*Ever to be the Best*”. The Lean Team consists of two full time Facilitators; Mark Robinson and Steven Yorkstone and one facilitator on secondment from the Business Improvements division, Shannon Denson.

The aim of Lean within St Andrews is to help the University delivery a high quality service through organisation effectiveness and efficiency by initiating a culture change. That culture change should be one of continuous improvement using a “Respect for People” principle in order to motivate employees, and enable them to achieve their full potential.

Although Lean is relatively young, the division already has a very impressive portfolio including;

- Status Letters on demand rather than in 10 days;
- Students can self certify their absence online and so get any needed support quicker;
- Books can be browsed on the library shelves 2 days after the book arrives;
- Receive financial aid more quickly (where eligible);
- Students can start a society in 2 weeks rather than 2 months;
- The University now has one consolidated Research Funding Office;
- Schools are able to manage their own Research Leave more easily;
- Advertising for new staff has been made much faster, with a saving of around £150k on advertising;
- Numerous processes have been updated and improved including for Purchasing to Pay in residences, Cash Handing, and many more.

Lean has the backing and support from the Principals Office, as well as having the philosophy laid out in the Universities’ Strategic Plan. Many units and departments have embraced Lean, and the Lean Team continue to promote, engage and communicate the philosophy in order to create process improvements that will help competitiveness. Their focus is not on reducing costs, although in the long term this will inevitably be achieved, their focus is on efficiency. Surprisingly, no employee has been made redundant as a result of Lean interventions (other than natural wastage).

1.2 Lean Manufacturing Principles

The evolution and development of the term “*Lean Production*” has been well documented from its origins as part of the Toyota Production System (Ohno; 1979). Although not officially the first to use the term “*Lean*”, it is argued that through the Toyota Production System (TPS) the term was formally documented as a best practice within the manufacturing industry, accessible to the mass. Research by Schonberger (1996) redefined world class manufacturing excellence in terms of competence, capability, customer-focused, employee driven and data based performance.

Lean was developed as a pragmatic response to Western competition, and endorsed by many keynote Japanese companies. According to Womack *et al.* (1991 - the most influential writers on Lean Production) the aims were straightforward: to reduce production-engineering costs and increase quality (subsequently maximising consumer loyalty to the product).

It is argued that the success of Toyota at implementing such a manufacturing system is due to two fundamentals; firstly Japan’s natural resources and secondly, work ethics within Japan. At the heart of the TPS is the elimination of waste. The role of the worker, within the just in time concept, is the second most important aspect of the TPS. It is evident that academics and authors place high

emphasises on the role of the workers who they argue “add value” to the process through diligence.

Consequently, the principle of Lean can be separated into two halves; firstly the operational principles of just-in-time (JIT), total quality management (TQM), supplier relationships (SR) and continuous improvement (CI). JIT is the most vital element of Lean, yet has little consensus over its definition often being described as simply “a toolbox of techniques”. Academically, JIT can be described as “identifying and avoiding waste in the shape of idle labour” through utilising human resources. TQM is a term often used within business, and specifically is defined as “an integrated approach to achieving and sustaining high quality sustaining high quality output, focusing on the maintenance and continuous improvement of processes and defect prevention at all levels and in all functions of the organization, in order to meet or exceed customer expectations.” SR do not just emphasise suppliers as in the traditional way, they incorporate internal effectiveness, external efficiency and communication processes in order to achieve enhanced quality. Finally, these are sustained through relentless CI, which incorporates Kaizen tools in order to “unleash employee experience and creativity” and improve business processes. Here, we see the cross over between operational elements, and human resource elements. Over the last 15years or so the focus has increasingly shifted from a “hard” approach to a “soft” approach focusing on respect for people.

Secondly, there is the worker centred, human resource focus. This incorporates a view of human resources as being strategic. Organisational structure should be flat in order to encourage team working, and shared communication. There should be an enabling culture emphasizing empowerment, reward linked to team performance, recruitment and selection based on talented individuals, and training and development in order to create a truly learning organisation. Toyota highly advocates the use of talent within their own Lean manufacturing system and actively promotes the notion of talent management. Employees who are engaged and excited by what they are doing are more likely to work harder for the good of the organisation.

Heavy and extensive investment in training and development is a key HR practice in Lean Organisations, and linked to team-based skills development. An organisations commitment to “work-based learning activities” can positively result in generating employees with better skills. This can lead to the development of firm specific skills, or “make their own human resources” which links to practitioner based research advocating the idea of the multi-skilled talented “yes” candidate.

Lean therefore takes a resource based view stemming from the idea that the development of resources to enhance firm specific knowledge and skills is paramount. This, in turn, creates a high performance work system (HPWS) together with the extension of employee involvement which is a result of innovative work practices asserting “more concretely” TQM programs, quality circles, functional flexibility, and teamwork.

Many industries have taken on this concept of Lean, and transferred it to their own context, most notably healthcare, retail and public sector organisations.

2.0 PART TWO – Findings

2.1 Introduction

This section presents the findings from the 22 interviews and has been separated into five main sections.

The section opens with a discussion of the definitions and perceptions of Lean among the interviewees. The proceeding sections are then focused on operational efficiency (including networking & collaboration, customers and competitiveness), respect for people (including empowerment, training and development, performance management and communication), line management and senior management (including management style and buy-in), barriers to implementation, the Lean Team (including positive and negative perceptions, Lean events) and developing a new culture.

Positive and negative perceptions are integrated into sections where appropriate, and an alternative design to the current training programme and Lean Event is presented. The section concludes with a discussion on how to develop a new culture and a summary of the findings.

2.1.1 Understanding of Lean

Each individual was asked to define what they understood the term “Lean” to be within the first half of their interview. Although a range of descriptions emerged, the top 5 definitions⁵ can be described as follows;

1. *Processes* (including process improvement and process management)
2. *Efficiency*
3. *The Lean Team*
4. *Waste* eradication (including time)
5. *People* perspective (including teamwork, mindset, challenging individuals)

The definition of what “Lean” was among individuals was wide and differing, with the majority placing high importance on the term “process” which encompassed such aspects as process improvement and process management, with the second most popular definition being the term “efficiency”. This is expected as the origins of “Lean Production” highlight the importance of processes and efficiencies. Perhaps surprising for the definition of Lean at St Andrews is the “people perspective” as the University publicise the importance of the Respect for People approach, however very few individuals recognised that people were part of the definition of Lean.

More interestingly, a high majority of individuals defined Lean as being the Lean Team. Although it is important and understandable, that Lean and the Team are inter-definable, it does highlight that there is a lack of distinction between the two. The Team are, and should be, facilitators only and should not be defined as Lean (the methodology) if they are to develop a new culture of continuous improvement within the University.

⁵ These Top 5 definitions are in terms of popularity amongst the 22 interviewees. Some definitions mentioned more than one aspect. Where definitions were like-minded they have been grouped together.

Five individuals suggested that the term Lean was not particularly radical and has, in fact, been present within the University for a long time. Four individuals highlighted that it was a “*common sense*” approach to management, and that each manager should be intrinsically carrying out Lean as part of systematic thinking, however the term “*common sense approach*” leads more to an understanding of Six Sigma methodology than true Lean.

Worryingly, two individuals were unsure of what Lean was, with one interviewee asking the researcher;

*“How are you defining Lean here? Isn’t it the Lean Team?
Or are you defining it as something else?”*

Although the Lean Team, inevitably, push the Lean agenda it became clear that these two individuals, while having fully actively engaged in Lean activities, were still defining Lean as the Team themselves.

Other notable comments on definitions included acknowledgement that Lean depends on which industry you operate as to its meaning, a focus on changing mindsets and creating ownership, efficiency and effectiveness, streamlining processes and added-value. In addition, Lean was summed up by one individual as;

“Doing away with processes that just aren't fit for purpose”

Interestingly two individuals suggested that Lean and change management were associated. Three individuals highlighted the importance of the continuous improvement aspect being built into people’s jobs;

“[it is] a concept, that should live with us day to day in the way that we approach our job, in the way we do things and in the way we think about what we do.”

There was only one potentially negative definition of Lean which suggested that “*Lean is a typical example of large organisations, as in Higher Education, not trusting the Departments*”. However, this definition must take into account the transferability of Lean and issues associated with it, the same respondent also defined Lean as being the Lean Team.

2.1.2 Perceptions of Lean

Inevitably there was mixed attitudes on perceptions of Lean pre and post engagement (where those had engaged in Lean activities). Attitudes tend to be bound by factors such as the success of the process improvement post-Lean Event, the design of the Lean Event and management buy-in. Interviewees from each level of the hierarchy expressed both positive and negative perceptions; this was not limited to one level or group.

i. Positive Perceptions

Of those whose perception was that of a positive one, the majority had approached Lean initially

with negative perceptions;

“There was an initial concept when the staff first went to a Lean session and thought “this is not going to work!” and so it did take time to get over than hurdle and now if they get the chance to go to a Lean session, they’re putting their hands up”

“My perception has definitely changed. I went to the first meeting thinking “Oh I have heard this all before” ...you need to follow things though. I think the Lean Team have done a great job of facilitating that. My perception of Lean has definitely got better after being involved in Lean activities.”

Moreover, one individual suggested that the concept is *“absolutely crucial to this institutions success”* suggesting that the approach is well embedded within their own department. Supporting this, another individual from the management level of the hierarchy highlighted that Lean had now become *“part of the vocabulary”* of the University, also suggesting that it is becoming well embedded.

Other notable comments on a change in perception include one individual who claims that pre-Lean engagement, being new to their job, they was rather unsettled. However post-Lean engagement they gained confidence and understanding of both their own job and that of the wider University, as well as helping introduce them to other individuals.

Four individuals from the management level of the hierarchy highlighted the importance in *“selling”* the concept to members of staff in order to create a positive perception. One suggested that by selling it in the right way to staff and *“trying to be positive about it”* they can get their staff on board. The importance of communication was also highlighted by another individual who suggested that initially the perception was that Lean was *“about technology.”* Once that perception had departed, more positive perceptions filtered through.

ii. Negative Perceptions

However, some individuals suggested that following Lean engagement there was in fact more work to be carried out indicating that their motivation post-Lean motivation has decreased. This not only defeats the object of introducing Lean, but also creates more barriers and a less enabling workforce.

Some individuals, both from the management and lower levels of the hierarchy, had rather strong feelings about Lean however this can notably be linked to the context, i.e. Higher Education, in which it is being implemented. The most negative perception was one suggesting *“we should just close it, and save the University some money”*. This same individual was one who had an unclear understanding of the definition of Lean, and therefore may have a negative perception due to a lack of understanding. This highlights the crucial role that communicating and training fully with members of staff play.

In terms of the context of HE some individuals suggested that such aspects as the environment, the sector and the structure cause problems when implementing Lean. The *“heterogeneous environment”* in which Universities operate was suggested as a reason for Lean *“not necessarily*

being the best” in some departments. The autonomous nature of departments within the University was supported by other individuals; moreover the diverse ways in which each department runs their processes was also highlighted as a potential negative perception of Lean in HE succeeding.

Finally, it was acknowledged by one individual that the public sector is “*more prone*” to fads, with two individuals highlighted the difficulties in implementing these traditionally private sector methodologies within HE.

2.2 Operational Efficiency

As the majority of individuals focused their understanding of Lean on what can traditionally be alluded to as Business Process Re-engineering⁶, it was interesting to discover that one of the major stumbling blocks to operational efficiency was considered to be the system itself.

Such a move to operational concepts and methodologies is difficult, with two individuals suggesting that the move “*wasn’t achieved*”. This was also supported by an additional individual who suggested that Lean in HE is “*more focused on the people and the approach than the actual process*” which is as a result of the inability to be able to standardise processes within HE;

“Often there is insufficient time [in HE] to say that we are going to perfect this from the point of view of standardisation and efficiency”

i. Positive Perceptions

There were mainly positive opinions on the process improvements which Lean has impacted on, with the majority of those who had actively engaged in improvement acknowledging some sort of enhanced operational efficiency.

The perceptions between individuals within the same unit or department, however, were not alike. Individuals from the higher levels of the hierarchy often had more positive perceptions of the results of process improvement than some within the lower levels in the same department.

ii. Negative Perceptions

Six of those interviewed identified the system (notably the Information Technology, or IT Department) as the main reason why they themselves cannot carry out Lean effectively within their own unit;

“We’ve now come across stumbling a block because of IT.. You just think “well what do we do now, because I restricted services that I’m being given” so that’s an example of, you know, it not working.”

“I think to be honest IT as a unit, the IT systems unit, is one of the large stumbling blocks for the stuff that we do”

⁶ “Reengineering is the *fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service and speed.*” (Hammer & Champy ; 1993)

“They are not supportive!”

IT and Lean are inherently different, as one individual highlighted in their definition of Lean; however the perception among the majority appears to be that St Andrews *“has got muddled up Lean with IT.”* One individual highlighted that it was almost impossible to *“run IT separately of Lean.”* This indicates a lack of communication among staff of the differences between essentially Business Process Reengineering, and Lean.

“They [IT and Lean] need to be together, because almost all solutions have got to involve IT. Or they are IT related...We have just appointed a new Head of IT in the University and I am more optimistic on that impacted upon us than about a Lean Team.”

These problems further highlight the lack of holistic approach to Lean which is currently being employed within the University. Many individuals who had attempted to engage with Lean found it *“frustrating”* that certain systems within the University were not in place to allow the effective implementation of the process improvement;

“I find it very frustrating that when you want to do things, and you come out, and things don't get done...the system won't let us do [it]”

“We couldn't do that because we went to Joe Bloggs and he said we couldn't do it...constant stumbling blocks”

“People go “oh well I can't do that and I can't do that. The system won't let us do that” or “oh we'll need to go through this committee or that committee before we can get an answer on this little thing””

These three individuals emphasized that Lean needed to have a holistic, system-wide approach in order to allow process improvement and, ultimately, a change in mindsets. The need to standardise processes also emerged as being harmful in HE which in one case has caused *“a slight antipathy towards things like Lean in places like Higher Education.”*

Conflicting perceptions on the impact of operational efficiency also emerged from individuals within the same department or unit. While one individual from the management levels of the organisation suggested a positive impact on operations, a member within the lower levels of the hierarchy suggested that processes had *“expanded, not reduced”* due to more paperwork being involved post Lean process. They acknowledged that more paperwork might be necessary, however *“that particular part of the process has not been made clear to me in the slightest!”* once again highlighting a lack of communication to all involved in the process.

2.2.1 Networking & Collaboration

In terms of enhancing networking and collaboration both within and between units and departments throughout the University, 17 individuals interviewed suggested that one of the key successes of Lean Events is the exchange of ideas and interaction opportunities they present with other departments;

- One individual highlighted that as a result of the Lean Event, they now have more of an

understanding of how another specific unit operates, as well as building a growing network with people within that unit;

- One individual suggested that *“liaising with different people from different departments”* was the major success of both the Lean Event and the Lean Team;
- Two individuals consciously stated that it has *“definitely”* increased collaboration;
- One individual from the management level of the hierarchy acknowledged the main success of Lean was *“team improvement and team working.”*

One of the main bonuses of the Lean Events was cited by many as their impact on networking and ability to bring people together that under normal circumstances would *“never have an opportunity to spend time with.”* One reason for this success is that participants are forced into an environment where they *“are made to sit together and really get to know each other.”*

In regards to collaboration within departments, several individuals from the management levels of the hierarchy suggested that this has increased, and that staff are now more willing to work together to produce a good system *“that works effectively in producing the results, but immediately improves the whole feel of the team.”* Although it was acknowledged that it is easier to communicate within units on the whole, there is still some distance to go in terms of inter-unit communication. Until each unit embraces Lean, it appears that full collaboration is unlikely.

In contrast, two individuals suggested that Lean Events decisively did *“not”* increase collaboration even after participation in a Lean Event, suggesting they in fact either made it worse or depended on the people within the team you work with. One individual *“hoped”* that Lean Events would have a *“longer term”* effect on enhanced collaboration, however was unsure as to whether it was currently happening.

2.2.2 The Role of the Customer

Highlighted as being a vital ingredient of Lean within academic literature to which any process improvement should focus on, there were mixed comments regarding whether the customer had benefited from the application of Lean to a particular process within St Andrews University. Part of the problem with Lean implementation is this very fact, according to one individual, that *“The University doesn't think of people as customers; that is one of its fundamental problems.”* Any Lean process must *start* with the customer, and work backwards in terms of maximising quality for them; this is a fundamental difference between Lean as a concept and BPR as a methodology.

One individual highlighted that *“That's why we are here, that's why we are employed at the end of the day; you know you are here to serve the customers within the University and out of it.”* Most of the interviewees demonstrated a good understanding of who their customer was, and aimed to improve processes in order to help the customer; however in some cases it was suggested that the end user/customer/client had little or no benefit from the process improvement.

Of those who alluded to the fact the students (the customer in this case) had *“absolutely”* benefited from the process improvement, they failed to provide a measure of this. The most common reaction was that there was a *“hope”* that the customer had benefited.

2.2.3 Competitiveness

Increasing competitiveness, and differentiating oneself from the competition is a vital ingredient of Lean and historically those who have embraced Lean wholeheartedly have become some of the most competitive companies in the world⁷. However, there was a lack of consensus apparent over whether Lean initiatives had increased competitiveness or merely just improved processes.

One individual suggested that Lean had “*potentially*” increased competitiveness;

“Clearly it is about efficiency, so we do things more efficient only you think of competitive in terms of cost, there is benefit there. Clearly, as you have just said, Lean is also about customer service and delivery, so if we do our processes better than people are going to be more satisfied with what we do.”

Three other individuals also suggested that by improving processes, they would hope that various different aspects of service are “*getting better*” which then “*improves the quality and improves the student experience*”. This highlights the distinction between BPR and Lean once more, and alludes to the fact that BPR is in place within St Andrews as opposed to Lean.

However, the changing political and economic climate was cited by more than half those interviewed as being vital in the utilisation of Lean as Universities become focused on being more competitive, one stating “*we’ll have a better case for Lean-ing things*” under such circumstances.

2.3 Respect for People

The “Respect for People” motto is one that Lean within St Andrews appears to place high emphasis on. It is through this side that the more human, or soft, side of Lean is demonstrated which was stated by one interviewee as being “*the [most] easy to see in terms of culture, management behaviours, and the way team members relate to each other.*”

The respect for people side did not rank highly in individuals’ definitions of Lean, and indeed the findings and perceptions on this aspect support that. The culture both within the University and within the department, management style, and communication all appear to have an impact on the respect for people.

In terms of which was most important, operational improvement or respect for people, two individuals suggested that “*one is not going to work without the other...it’s a two-way street*” however also acknowledged that the amount of respect for people essentially is influenced by culture; “*You either have that of the culture within the department, or it isn’t there*”.

⁷ “Companies that use Lean manufacturing with success are also notably very competitive amid intense and rising competition in the corporate world.” Examples such as Toyota, Nissan, Honda, Komatsu, Tesco, Asda, Virginia Mason Hospital, Sanofi Aventis Pharma, Bank of America, HSBC, Deutsche Bank, Department of Work and Pensions, National Insurance Contributions Office, Local Government, Specsavers.

i. Positive Perceptions

Two individuals who hold management level positions asserted that in order to meet the process changes and process improvements there must be an inherent respect for people and their ability. They suggested that without the respect and empowerment, processes cannot improve. Comments on such issues are covered in the proceeding sections of this report.

“They are everything! [Laughs] They are at the core of everything! There are no processes if there are no people!”

“The people impact has been the biggest one”

Other managers who were interviewed also cited staff meetings as being important in developing people and teamwork, increasing motivation and enhancing ownership and encouraging empowerment. One individual suggested that *“one of the extremely valuable positives of Lean... is making people realise that they count, that their opinion counts, and that they are just as important as anybody else for the institution and for the process”*.

ii. Negative Perceptions

However, this optimistic outlook was not shared by all individuals who hold such positions, and certainly not by those who do not hold positions within the management levels of the hierarchy. One individual (a manager) claimed that the people are the downfall of Lean initiatives, not the operational perspective. Furthermore, one suggests that;

“You either have people capable of doing the job that they are doing, or you don't. Lean should help identify the people who were not able to do their jobs that they are currently on, rather than starting with the good people who you know a good people”

From the perspective of the grassroots level, 8 individuals from this level of hierarchy identified a lack of communication of this specific principle. One suggested that *“the people side of it doesn't come through”* while another highlighted that through the different layers of management it *“doesn't always come through”* and instead gets *“muddled.”*

Moreover, many individuals acknowledged that the respect for people side depended very much on the management style of the manager who was directing the process. [NB Management style is considered in more detail in Section 2.4.1]

2.3.1 Empowerment

Employees must be empowered in order to create a successful⁸ Lean system. An encouraging finding throughout the interviews was on the subject of worker empowerment. The majority of those interviewed at all levels felt that Lean has given them more responsibility and has resulted in enhanced feelings of empowerment and ownership.

⁸ Success rates are higher in companies who's employees are actively involved at all levels and stages of continuous improvement activities – up to 38% (Source – Copeland, K.; 2010)

i. Positive Perceptions

One manager highlighted that it was those people at the grassroots that *“have the best ideas and it’s all about encouraging these and bringing them out.”* Another manager supported this view suggesting that Lean has allowed their department to implement *“a lot”* of ideas from the grassroots which is important as these are *“the people with not just the best ideas, but **THE BEST ideas.**”* [Emphasis added in bold].

Other managers also highlighted that involving their staff in process improvements is a good way to gain ownership, and usually results in staff that *“are keen to raise issues with managers and talk to managers about things, make suggestions... which is good”*. One individual suggested that the Lean concept allows for staff to make a valued contribution and give them the feeling *“that they can make a difference”*. In terms of ownership, one individual stated;

“I felt instead of telling them how we were going to get there it was actually better to engage them and get them to find the process for themselves”.

In terms of grassroots (i.e. those not holding positions within the management levels of the hierarchy), interviewees within this level generally felt *“more empowered and responsible”* and that it has *“given [their] job a breath of fresh air.”* Some quotes worthy of note include;

- *“We are also becoming, what's the word, we are all taking responsibility for what we are doing. We have ownership, and I think that's a huge thing”*
- *“I think it helps you to feel that you are contributing something”*
- *“I think it gives you more value”*

Moreover, the methodology used to carry out Lean within the University is cited as being a contributor to the enhanced feeling of empowerment among individuals interviewed;

“The way that we do Lean here is getting people involved in getting them interested in the process, and having them design the process themselves. They go away with ownership, and they feel good about it.”

Many of the positive perceptions on empowerment link back to management style, and enabling managers who *“are very keen to support what has happened”*. The majority of managers interviewed acknowledged that they must develop an enabling style in order to fully empower staff. Support, communication, encouragement and utilising staff’s skills (*“There are a lot of good people downstairs and what our concern is that we don't want that to be blocked”*) were also cited as being vital in the drive to empower staff.

ii. Negative Perceptions

However, inevitably there were individuals who suggested that this was not the case. One individual asserted that *“it would be quite nice to be asked if there was anything”*. A subsequent individual also highlighted that even where Lean had been implemented successfully, the Lean Team often fail to let certain people become empowered; *“they [the individuals] need to possibly take a bit more ownership of these projects that they run”*. It also became clear when 4 individuals suggested that by not being *“allowed”* to come up with process improvements of their own accord,

this was neither continuous improvement nor empowering workers.

Another individual asserted that the level of empowerment devolved depended on your line manager and their style of management. One more suggested that they felt empowered during the Lean Events, however as a result of stumbling blocks and management style felt this dissolved once outside the Lean Event.

Finally, one individual from the management level of the hierarchy suggested that while empowering works is beneficial, this can go too far acknowledging that in instances they *“have gone Lean a couple of steps too far”* which requires staff to *“check back”* at times when their decision may be risky.

2.3.2 Training and Development

Potentially the biggest concern has been highlighted in the area of training and development, and stressed an important finding which the Lean Team must take on board in order to progress in the future. It can be summed up in one simple quote from an individual;

“Until people are fully trained in Lean, there will always be a barrier”

Although, academically, training in Lean does not necessarily result in a positive outcome, undoubtedly it is a vital part of communication and understanding of the concept⁹. Individuals at this point appeared not to be talking about training in terms of Lean Events; rather they were asserting the lack of formal Lean training available within the University. When asked if there was any training on Lean available, one individual answered bluntly with *“there is virtually nothing!”* Another stated;

“I think we need some extra training and that's maybe something else that they [the Lean Team] can come down and do some training to individual schools and tell them a bit more about what Lean is. Obviously there is a formula there, but without the full training some people can't understand.”

This assertion came not just from individuals within the lower levels of the hierarchy, but also from managers. The overwhelming majority of those interviewed (19) suggested that there is a lack of formal training available for them and/or their staff on the concept of Lean or continuous improvement.

Some suggested they would like to understand what the *“real”* concept of Lean is; some suggested they would simply like to be taught the principles. However, the current training delivered by the Lean Team in general *“does not teach us anything new about Lean and processes”*.

Although the majority of those who identified a lack of training agreed that some form of training is necessary in the future, one also highlighted that this, along with other Lean Events, must fit in with their own job;

⁹ Research suggests that the public sector in general lack behind other sectors in terms of training and Continuous Improvement. Only 36% of managers within the public sector are trained in Lean compared to 89% in UK Manufacturing (Source: Copeland,K.; 2010)

"I think that on the whole it [formal training] is a good idea but... there are implications if they remove you from your day-to-day job. Obviously you are away from that for maybe a week, nobody is doing your job back at the ranch!"

In terms of development, although a Learning Organisation (often associated with Lean Organisations) is not present within St Andrews, some managers are able to identify development of their staff. The cross-unit collaboration and communication was highlighted as key to *"getting people out of their silos, which is an important developmental thing."*

Moreover, two managers acknowledge that following Lean Events, they were much more aware of the skills their staff had (and didn't have); *"[the skills that] I had been aware that they hadn't been able to do before came through very strongly"*. Two other managers stated that after identifying the skills of a certain member of staff they now ensure that, that member of staff is given more opportunities within the department.

2.3.3 Performance Management & Reward

One idea which did not emerge as being carried out currently, is the notion of reward linked to performance. Within academic literature there is a tension between performance and reward, with mixed evidence supporting the view that performance and reward should be linked. However, an active performance management system to monitor employees, and help develop positive behaviours¹⁰ needed for Lean implementation appeared to be lacking.

i. Positive Perceptions

The researcher is aware that at the time of conducting the interviews, some managers were preparing themselves to attend a meeting on linking performance to reward. One individual had already thought of some ideas, as they suggested that the performance/reward link was an important factor in developing employee behaviours aligned with Lean, such as *"flexitime...maybe we need to look at staff being able to buy back holidays"*. Two other individuals also asserted that a key to the success of Lean is *"about rewarding positive behaviour"* and therefore had previously not considered linking performance and reward, but acknowledged that it could work.

In terms of an individuals' personal reward, two interviewees from the management level of the hierarchy suggested that reward was in their staffs motivations and behaviours;

"It is more rewarding when you can see your team working in a happier environment and in control. And honestly, it makes managing your staff a lot easier"

"One of the by-products is a far more motivated workforce...Partly because people feel empowered, they feel trusted, they feel valued, and they feel that their opinion is being listened to. But it takes a while for that to spread around the unit"

In terms of linking reward and performance, some managers suggest this could create *"healthy competition"* which others understand that non-monitory rewards are crucial. However, measuring

¹⁰ Chartered Institute of Personnel and Development suggest that rewarding desirable behaviour is crucial to performance (Research Report, January 2010)

who performs well is difficult.

On a departmental level, one individual from the management level of the hierarchy suggested that encouraging departments to save money through Lean activities must be linked to a financial reward;

“If they say “if you save £10,000 you can have £5000 back to spend on Chemistry” then I'd get my colleagues on board... so yes I think there has to be a link, it has to a relationship where people can see that by doing this there is a benefit to them because there is no loyalty to the global organisation.”

In terms of motivational factors, some managers agreed that their staff appeared more motivated following Lean Events and implementation, however failed to provide a quantifiable measurement instead suggesting *“they look happy!”* Interestingly one suggested that managing the performance of an individual is done through *“managing the underperforming staff”*. This same individual suggested that a tough approach to managing performance is needed in order to help those who are overburdened; *“if people are underperforming they will get help, and beyond help they will get action!”*

ii. Negative Perceptions

However, in contrast one individual from the grassroots level of the hierarchy suggested that personal motivations were often diminished after a Lean Event, as *“you remove one problem and there are usually several others waiting for you around the corner.”* Another two individuals also supported this view, that personal motivation was often reduced as managers consistently required more and more from them, yet failed to effectively performance manage them.

Although performance management should be a part of every manager's job (regardless of Lean) there was only one management level individual who suggested a performance management system they use in order to get the best out of their staff;

“If I have poor staff I need to look at ways of improving their capacity and their output. It is about outputs at the end of the day, and if you have staff that aren't performing well you have to figure out why they are not performing well. There are different ways in which you can make their job more efficient without making them more efficient, and that's what the Lean part would be.”

However, there were a few individuals (4) who suggested that an active performance management scheme linking reward and output is neither possible within the University, nor useful.

One suggested that by introducing such a system *“you are going to have to instigate set targets and things like that... I don't think that's an answer to make people more motivated. I think it could well have a detrimental effect.”* Another suggested that it would not be successful due to the style of management currently in place in some departments. Finally, one suggested that it would need to be *“consistent and fair”* which is difficult as each department is at different stages of the Lean process, however could *“understand the merits in doing something that, but it can cause other problems for another group and can be demoralising for them.”*

2.3.4 Communication

Communication emerged as an essential way of getting peoples buy-in and is vital in creating a culture of continuous improvement. This is in terms of the following areas;

Communication type	Supporting evidence
Lean throughout the University	<i>“The fundamental message of the need for efficiency is one that we do have to drive”</i>
Lean initiatives between managers and their staff	<i>“There is a lack of communication”</i>
<i>Between the Lean Team and the rest of the University on their activities</i>	<i>“Part of our task, I think, is also to communicate the successes of Lean because if we just say use Lean that's just another instruction from on high”</i>

As one individual suggested, positive communication is about *“people being honest”* and that *“People have to feel secure enough to say and express what their concerns are”* which are ultimately linked to management style.

i. Positive Perceptions

Some individuals from the management levels of the hierarchy suggested that they actively promote positive communication within their department which results in the following (amongst others):

Result	Supporting Evidence
Easier acceptance/buy-in	<i>“First of all [you have to] get people to believe and that what they are going to lean is worth doing”</i>
Enhanced dialogue with and between members of staff	<i>“Our team meetings are very functional now and it's broken out now it's not just me imposing it”</i>
Less scope for negative interpretation	<i>“We will engage directly with the[m]... So, they get the message direct from us about what we are looking for and they get the opportunity to feed back into us”</i>
Reduced hearsay	<i>“Nobody can be saying “oh but Management said this” when they are hearing it from us”</i>

ii. Negative Perceptions

Due to the culture of the Institution, communication in general terms was cited by many as *“always problematic”* and that *“the university as a whole is very, very, very bad at talking to each other.”* This is a large problem which creating a new culture, as Lean is as much about communication and change management strategies than it is about quality and process improvement.

It was identified that there must be effective and *“reality based”* communication. One individual suggested that it should be made clear to anyone who participates in Lean that *“you're not going*

to see instant success and you are going to have to take time out.”

Also linked to management style and line managers (see preceding sections) two individuals suggested that there was a distinct lack of communication from their own manager on the processes which will be subject to Lean. This then had a negative effect of motivation; *“you just get an email and they tell you that you are going to a workshop. That’s all we know”* was one response to the lack of communication when deciding what will be subject.

2.4 Line management & Senior Management

The role played by line managers emerged as being crucial to the effectiveness of Lean; therefore this section presents the findings on perceptions of line manager and senior management, management style and buy-in. This section contains some controversial findings, which must be monitored and reviewed by either the Lean Team or senior management if Lean is to continue in the future.

It became clear that management style and the effectiveness of line management were crucial (see next section) with some interviewees suggesting their managers were better than others at communicating and encouraging Lean. One individual stated that two members of their management team that were *“shall we say least on board... these two managers don’t work here anymore”*. Moreover, there was the acknowledgement that middle management have tended to see Lean as *“a challenge to their authority and their autonomy”*.

In terms of communication, three individuals suggested that their managers were not effectively communicating or feeding through the message of Lean, or which processes should be improved enough;

“If they [the line managers] could feed down the communication that would help! We seem to get presented with a plea, and that is a situation that will change in a couple of week’s time. So the feedback doesn’t come right down to grassroots level.”

This highlights what other individuals also asserted, that firstly there is a lack of initial communication when deciding which process will be improved also supported by another interviewee suggesting;

“We don’t have a say in what is Leaned. It will probably be a good idea if they actually asked right across the board “is there any process that you do on a daily basis that you think is it needing to be Leaned?”

Of those who suggested that initial communications regarding Lean Events were inferior, every one indicated that getting the grassroots more involved from an early start in choosing which processes to Lean would enhance buy-in.

Secondly, the issue of feedback given by line managers was often lacking. Of those that suggested this was the case within their own situation, 80% of those also went on to state that after the event managers often forget about it and move on to the next event *“you go and you do and, and you may improve your process but then they [line managers] forget about it and move on to something else”* highlighting that there is a lack of feedback on the effectiveness of the event in

some departments from grassroots level.

Thirdly, some line managers appeared to lack a holistic overview of the whole process instead looking at issues on a process by process basis;

“The line managers don't seem to integrate it [Lean process improvements] looking at the timescales and the current day-to-day situation that is going on. You get 1, 2, 3 line managers pulling in different directions, that has a big impact.”

80% of those involved in Lean Events supported this view that some managers are not looking at *“the bigger picture.”*

In terms of senior management, this presented two sets of findings. On the one hand, having senior management champion and sponsor the initiative was seen as a *“critical success factor”* in the drive to implement Lean.

“I think the fact that we have senior management as champions makes a big difference. And because the senior management champions are saying the right things”

“One of the things that we did find was that we were able to say “this is part of the Lean approach” so it gave it validity because it had senior management sponsorship and they couldn't argue with that”

It was seen by many (mainly within the management levels of the hierarchy) that this justified their department embracing Lean, and was necessary in demonstrating this to staff; *“we have done the “correct” thing because we have used the Lean a lot”*. However, on the other hand such sponsorship from senior management while being seen as important was also seen by others as being negative.

Although the Lean Team act as external facilitators and consultants, some interviewees saw them as *“acting on behalf of the Finance Director, and I don't think that gives a good view”* as well as *“[being sure] they are reporting back”* to senior management. One individual stated boldly that *“because the Q&F leads over them [Lean Team] I think it helps them undoubtedly”*. Again, another individual stated *“we know that Lean is coming out of our Finance Office”* and there *“is always the risk”* that it is being seen to save money rather than to drive efficiency. These views and opinions were expressed by individuals holding management positions within the hierarchy.

It would appear that one of the reasons why departments might not be fully engaging (or engaging at all with Lean) is because of *“the problem that Lean is perceived as a central position on it”*. While acknowledging that it *should* be a central philosophy, many individuals proposed this reason was deterring some departments.

Two individuals openly admitted that the sole reason that they embraced Lean was to *“please”* the Q&F;

“Ultimately it resulted in a positive shift of attitudes towards our department, and I think it made self esteem within the department with a little more respect for [us] within the community.”

“Lean didn’t change how we did it, but I think because of the fact that we’d been through the process it proved to people who pull the purse strings that [the way we currently did things] wasn’t an indication of poor performance on our part but the fact that we just didn’t have the resources. As a result of the Lean our resources were increased.”

While both these individuals admit that senior sponsorship is, indeed, vital to the successes of Lean they also demonstrate that *“Lean was only taken on to satisfy them [Senior Management Team].”*

2.4.1 Management Style

Management style emerged as a controversial area of Lean and produced a number of negative perceptions throughout the interviews. Leadership within Lean Organisations should ideally be “enabling” which includes the following characteristics;

- Ability to let go and give individuals the latitude to do their jobs;
 - Holds interested in where other people stand on issues;
 - Receptive to people’s ideas;
 - Compassionate, responsive to people’s needs and feelings;
- A team player –helps other units or the larger organization perform well;
- Realistic about limits on people’s capacity to perform or produce.

Perhaps the most controversial findings after interviewing the participants emerged as being related to management style. 5 of those who were interviewed admitted to having being very uncomfortable with the direct management style of their superior, having knowingly pressurized their staff, or knowing of negative management styles being used in regards to managers trying to get their team onboard.

One individual suggested that management style and Lean are interrelated proposing *“it’s important that we look at the management style of managers whereby Lean would be part of that. How does an institution ensure that the management style of every part of the institution is the one that the institution supports?”*

i. Positive Perceptions

A limited number of those interviewed were entirely happy with the management style and communication used throughout the process. Some managers cited the importance of their own management style on the effectiveness of Lean;

“You’ve got to be empowering and let people go off and take risks and okay if it goes wrong!”

Two individuals suggested that their own personal management style was similar to that which Lean encourages. One also asserted the importance of not just their own style, but also *“not just mine, but the management team and all of the supervisors. Anybody who within any role of decision maker, manager... they all have to in order to support that approach”*.

Being an enabling manager was cited as the most important aspect by all managers and that you must *“have confidence in the people”* in order to devolve decision making. Interestingly, one individual highlighted the learning curve they encountered whilst learning to become an enabling

manager;

“You think of yourself as a professional that you always know what the answer is going to be because you pride yourself in knowing the best ways to do things, but some of the answers that they have come up with, and some of the ideas that they have come up with have been really quite surprising”.

ii. Negative Perceptions

Firstly, it became apparent that those who embraced Lean were more able to gain promotion and to be accepted within the department. Conversely *“the people who have not been willing to go along with that are actually not here anymore.”* This raised questions regarding the idea of the “yes” person, and was corroborated by several other participants both from higher and lower levels of the hierarchy.

The idea of the “yes” person emerged as being important as one interviewee suggested;

“You do need people who have got this focus on and mentality to believe that this’ll work and it does make you be a bit more forward thinking and acceptable to change because that’s always a barrier.”

Secondly, the specific style of managers became a focal point for those 5 individuals who commented on this area. One individual likened the management style of their manager in regards to implementing Lean Events as *“Bullying? Perhaps! Perhaps you could look at it like that.”* This was supported by two other individuals from the management level of the hierarchy, one of who stated *“I know bullying happens”* and the other suggested that *“arm-twisting”* was apparent in some departments, as well as one individual from the lower levels of the hierarchy experiencing such direct management.

Thirdly it became apparent that those who did not want to embrace Lean were, at times, marginalised until they were convinced to behave in a certain way;

“The fact that you have a core team saying “oh I’m going to Lean, its brilliant you’ll see the success!” makes it much easier for a new member of staff coming in and they are suddenly sitting in an office and they [the others] are all pro Lean it’s going to be quite easy to convert this new member of staff coming in”

“It’s isolating individuals that perhaps are not feeding into it and engaging with the way that they should.”

“If there are any blockages or blockers within that team they will hopefully be kind of, not sidelined, although maybe be either... either... change or take on board or it will really show them up.”

Likewise, although it became apparent that this occurred on an individual/group level, one individual suggested that this happened on a department level suggesting that if (as a unit) they do not engage, *“it becomes much more difficult to say why you haven’t.”*

Lastly, it became apparent that some managers appear to be embracing Lean not just because it will be of benefit to their team, but rather it will *“look good on their CVs”*. One interviewee from

the management level of the hierarchy admitted to this very point.

One of the main reasons of failure of Lean systems is the forced rather than voluntary participation of staff¹¹. Although the purpose of Lean, and the process of taking on and approaching Lean is of the voluntary nature, the evidence overwhelmingly suggests that the direct management style of some (may it be emphasized *some* and not all) is resulting in negative perceptions. The idea of the “no” candidate is vital to a Lean organisation as they constantly challenge ideas (continuous improvement); this notion was supported by one individual who suggested that *“in the current configuration of the institution most definitely there is a place for them”*. However, two other individuals suggested that there was *“no place”* for individuals who do not fully comply with Lean principles.

2.4.2 Buy in

Gaining buy-in when implementing a philosophy with the aim of changing the culture of an organisation is vital and 100% of interviewees acknowledged the key role buy-in at all levels plays in regards to the success of a Lean Event. However, there are different levels and types of buy-in which emerge as being crucial to success.

From those who are within the lower levels of the hierarchy, the majority suggested that *“success depends on the buy in from management.”* One individual cited that if their direct line manager did not support the philosophy of Lean, then implementing process improvements or the likewise within that department became difficult.

Moreover, one individual (from the management level of the hierarchy) suggested that once this buy-in was attained *“then the red tape gets cut”* asserting that there are *“hurdles”* which departments must overcome in order to improve processes, however these are on the whole reduced after management buy-in.

In terms of processes, commitment to the cause is higher if managers buy-in to the system, as one individual highlighted *“there's no point in doing that if you don't believe it is going to make a difference and you are going in with a rather uncommitted kind of approach”*.

In terms of those at the grassroots, some interviewees commented that the lack of buy-in they had experienced was due to them not taking ownership for identifying the process to be improved;

“In order to get buy-in, you need the people working on the process to come up with it themselves in order to create a sense of ownership”

This was corroborated by several other individuals who suggested that the current nature of Lean (i.e. that of more a process improvement, on a process-by-process basis being identified by either the Lean Team or management) often led to large amounts of resistance and a lack of buy-in, commenting *“If you try and force people down something there is more likely to be a resistance.”*

Furthermore, one individual suggested that while it wasn't currently been driven by the grassroots,

¹¹ Source: Copeland, K. (2010)

in order to gain full buy-in it needs to come from the people involved in the processes;

"I don't believe it is being driven by people from the grassroots saying that "we need to do something different here"... I don't think people at the grassroots have said "look we can do this better".

Of those within the higher levels of the hierarchy, three suggested that the buy-in of their staff depended on the buy-in of the senior management team (which is present) and the discourse which is used;

"As long as it can be explained to them what the potential savings are...as long as the right people at the top are saying "this is happening" then it will."

"We got a largely frosty reception...who said "oh I don't like this let's stick with whatever approach we have." We said "well that's fine. If you don't want to do that then we are happy!" We were just going to go ahead and do it ourselves!"

"One of the things that we did find was that we were able to say "this is part of the Lean approach" so we were able to just tag it"

Another also highlighted that *"having it in the strategy helps"* as it shows a certain amount of commitment to the Lean approach, and therefore can help enhance buy-in. The level of *"institutional buy in"* is crucial also as one individual suggested that without it being seen as strategic, *"it would be seen as a trinket that people don't really need to play with"*.

On the other hand, one individual asserted that enforcing Lean *"in a much more overt way, as opposed to a challenging way, I think would probably be counterproductive."* They argued that an enforcement of Lean, while not only reducing the potential buy-in of staff, also *"reinforce[s] the idea that it is on high. I mean there is still the suspicion that that is what is going on, and to some extent they are right."*

2.5 Barriers to Implementation

Barriers to the implementation (and buy-in) to Lean were diverse, with many interviewees suggesting different barriers which they had personally experienced. Some of these barriers have been mentioned throughout the preceding sections; however *Table 1* identifies some of the additional main difficulties identified from the research.

Those who suggested that *"the system"* as one of the main barriers to effectiveness cited operational issues (see Section 2.2) as being vital. In particular the Information Technology department was cited as the major barrier to implementation.

Those who cited bureaucracy as a barrier highlighted the amount of red-tape present within the university which restricts the amount (and reach) of Lean.

Those who cited individuals as a barrier alluded to the fact that some staff members who were creating a barrier needed to be told to co-operate, as they were creating stumbling blocks. This is also linked to mindsets of individuals who tended to suggest that because they had previously

carried out a process in such a way, they should continue to. One example was highlighted by an interviewee as the following;

"I have often said to the [specific School or Unit] "you are handing all the paperwork to us but why you doing that? Why are you doing this?" And the answer is "well I have always done it like that!""

Table 1 - Main barriers to effectiveness identified

Barrier	Supporting Evidence
The System	<i>"The main barrier is the frustration of the system not letting us do it"</i>
Bureaucracy	<i>"Red tape that is put up by processes is the main barrier"</i>
Individuals	<i>"There are certain individuals in the university that need to be told that [enforced]"</i>
Mindset	<i>"the answer is "well I have always done it like that" and that...oooh I hate that! I really hate that!"</i>
Time	<i>"You spend 5 days at these things but what they forget is you still have a job back at the ranch."</i>
Fear	<p><i>"It's partly been a kind of fear of being out of control"</i></p> <p><i>"Fear! Fear of change! That's the biggest one, everyone is afraid of change."</i></p> <p><i>"So the barrier is about giving them confidence"</i></p> <p><i>"Middle management that feel that Lean are telling them how to do their job"</i></p> <p><i>"Passive resistance; not responding. Active resistance; saying no!"</i></p>
Public Sector	<p><i>"The biggest single thing is the business of not being able to fire people. Because if you can't reduce your staff, what's the point [shrugs]"</i></p> <p><i>"I think it's the nature of public service"</i></p>

Age was cited as a barrier by three individuals; with one suggesting that *"senior colleagues are more of an issue"* however another individual from the management level of the hierarchy suggested that in fact it is not *"an age thing, I think that it is a personality thing"*.

Those who cited time as a barrier acknowledge that in order to achieve a longer term positive outcome, a shorter term loss was needed. One interviewee from the management level of the hierarchy also suggested that this caused initial worry;

"We had quite antiquated processes which were time consuming...and the thought of me taking five staff out of the office for five days, they just thought this was an absolute total waste of time"

Finally of those who suggested that fear was a primary barrier, this can be linked to management style and individuals fear. On the one hand, it was observed that some managers are fearful of Lean as it is seen as a negative reflection on their style of management;

“If we are being Lean-ed, we must be doing something wrong. The manager must not be managing very well”

On the other hand, fear within individuals of them *“losing control”* of the work that they carry out was particularly prevalent. It was also established that those individuals of the older generation were generally less accepting of change, and more fearful. One individual reflected *“one often wonders whether old dogs find it harder to learn new tricks”, but there is a little bit of truth to the acronym.”* Those in the younger generation were generally less fearful and more accepting of change.

Moreover, an interesting finding was highlighted in regards to the barriers of the nature of the work which is carried out. One individual in the higher levels of the hierarchy commented that it is much more difficult for part time staff to embrace Lean, and therefore determined that the nature of contracts can be a potential barrier to effectiveness;

“What they [part time workers] are saying is that they have got a limited amount of time to get on with their work... when they've got a lot of work to get on with then they are pulled away from it to do a project that they may or may not end up in a more efficient way to do the job that they are already doing. So it could end up doubling the workload”

When individuals were asked about ways in which to overcome these barriers which individual people place around themselves when asked to embrace Lean. The main points they highlighted were;

- *“Listening!”*
- *“Try[ing] to understand what motivations are there”*
- *“[Understanding] what is it that is stopping progress”*
- *“Gradually introducing new ways of working, and new ways of managing our work in small chunks”*
- *“more training”*
- *“more of a uniform management style throughout the University”*

2.6 Lean Team

The importance of the Lean Team in the delivery of Lean throughout the University of St Andrews cannot be underestimated. 20/22 of those interviewed remarked at one point throughout their interview on the role of the Lean Team without prompts.

Although culture change is most notably delivered by a Human Resource department, all of those interviewed asserted that Lean in St Andrews would not work if it were delivered by the HR department. Some of the reasons for this included *“[HR] are not capable enough”* as well as *“it would be seen with suspicion”* if HR were to deliver it. Other reasons for their existence include the fact that the majority of units (at this stage) require the Lean Team to *“facilitate things”*. Although not external to the university, one interviewee commented that *“you need someone who is external”*, however 3 individuals suggested that having a member of the Lean Team with a background in HR might be better *“to understand things”*.

One interesting stance on the subject of where the Lean Team sit within the University was

presented by an individual who stood in the middle of these two spectrums;

"If they stood in both camps [HR and Lean] maybe, if that was possible. You may be had a HR person or HR background that was involved in the Lean Team perhaps that would maybe work."

This poses interesting questions over the placement of the Lean Team, with two individuals highlighting the situation of the Team as being a possible negative;

"I'm not terribly keen that they are in College Gate because that kind of gives the impression that they are reporting back to senior management which they probably are, but his feedback from other folks in other units they are the kind of gone "ummmm, we are being watched ."

"When they were down the road...I saw them is far more independent. You didn't have to sign in; you could just drop in and see them. Now you have to sign in and walk past the principal's office...that kind of makes them feel a little less accessible, and I think that they should be totally accessible."

The Team were cited as being proficient, dedicated to their job and acting *"kind of like trouble-shooters. They come in and get something done and say that has to be done now, etc."* However, although greatly successful, nearly 50% of those interviewed suggested that the success was perhaps not down to the accomplishments of the Lean initiative, but *"somewhat partly due to the personalities of the people in the Lean team."*

Linked to understanding of Lean (see Section 2.1.1) and the role of the Lean Team, one interviewee, when asked whether they consider themselves to be carrying out *"real"* Lean they noted;

"Well basically we are doing Lean as we know it, you know what I mean. I think you actually have to ask Lean that wouldn't you? I mean they are going to say whatever they are doing is right!"

In terms of the Lean Office, one individual suggested that it is *"just another office in an expensive place"*, while another commented on the level of measurement which is in place to assess the Lean Team;

"The difficulty is you create these things, or the Lean Office, and they start doing work. How do you assess if they have been successful? So who assesses these people? And how do you ever assess any of this stuff?"

Interestingly, in contrast to the individuals who understood *"Lean"* to be defined as the Lean Team themselves, one individual declared that they neither consider Lean or the Lean Office to *"embody"* Lean, however see the Team more as *"making things happen"*.

2.6.1 Positive Perceptions

"The personalities [of the team] are the key to the success"

This was a reflection shared by many of the individuals. The Lean Team were cited as having developed a very good relationship with some units and departments, enhancing the role of trust and creating a network through which one individual asserted was *"essential"* in the pursuit of

Lean in terms of their own agenda and collaborative aims. The Team were also described as *“always [coming] up with a solution”*, and most importantly making people *“feel safe and secure”* in a non threatening environment.

The role of the Team as facilitators was often cited as a key positive of the Team. Some interviewees considered them *“consultants”* while other considered them *“guides”* or *“facilitators.”* One of the prevalent messages that came across was that, especially when communicating inter-unit, their role was priceless in terms of negotiation;

“One good thing about Lean [the Lean Team] is that they are very good at facilitating. When you start crossing 3, 4, 5 units or schools then it is good to have someone there coordinating and facilitating in the middle.”

A different individual also saw this as vital and suggested that the future of the Team was bright as they did not *“think they [the Lean Team] will ever go away because there will always be cross unit and cross departmental issues and I think that is when you need them.”* Their importance in this cross-unit role should not be underestimated.

In terms of their delivery of process improvement, there were some notable strengths which interviewees highlighted. Firstly, being external and having little knowledge of the ins and outs of the processes resulted in the Team being able to *“look at it from completely different angle than the person doing it”* which was *“crucial”*. Moreover, their understanding of process improvement was highlighted as vital; one individual asserted *“Oh yes...they know the processes. Admittedly if it is a cross unit project then they may not understand all parts the process, but the least they understand their bit.”*

Overall, each individual had at least one positive perception of the Lean Team, with a few noting that the mere fact that the Institution has a Lean Team *“makes people more motivated to show they are doing a good job”*. Finally, one individual concluded that the Team are great, however must ensure that the design of their process improvements is sustainable in the future in order for the Team to be regarded as a long term success.

2.6.2 Negative Perceptions

“I think that the Team are great but that is because of who they are probably. Not because of what they do!”

Inevitably, there were areas which surfaced from the interviews as being potential problems in regards to how the Lean Team deliver their service. The individual quoted above, for example, suggested some positive perceptions of the Team, however asserted that these were mainly due to the individuals in the Team – this was a view supported by 4 more individuals.

The majority of the concerns from individuals rotated around the type of service the Team were delivering (more on this is covered in Lean Events Section 2.6.3), the understanding that the Team have of certain processes and the lack of holistic approach they employ.

Firstly, two interviewees who had participated in Lean Events and who spoke very highly of the Team both delivered two like-for-like quotes suggesting *“The lean team needs to be leaned!”* Although having very positive perceptions of the Team, both asserted that the Team fail to take on

the concept of Lean within their own activities. Another commented on whether *“the lean people really know the “nitty gritty” of it all.”*

This idea of a lack of understanding of the real nature of processes was highlighted by a number of individuals (8) who thought that in order to develop a tailored process improvements, the Team must understand the actual process itself;

“They don't know anything about the processes, can be a slight problem because when you're doing your whole mapping and you're going over it is there is often a sort of repetitive”

Many individuals acknowledged that while it is essential that the Team are seen as being external, this results in a negative *“trade-off; if you don't belong anywhere, you don't have the expertise of any area. Is the person with the expertise in a position to do all of the analysis that you need?”* This was cited as resulting in problems in whether they *“really understanding the system properly”*.

Furthermore, and linked to the lack of a holistic approach, the Team were criticised as failing to look at the wider picture; *“They say “right, we will improve this process” but at the expense of something further down the line. Which doesn't solve the problem; it just moves it to somewhere else unfortunately”*. In instances this has resulted in a negative effect further down the chain; with one individual saying that the Team were *“just saying “do something” for the wrong reasons without understanding what we actually do”*. The lack of holistic approach was cited all 19¹² individuals interviewed which highlights a crucial aspect to improve upon;

“if [a specific unit] is Leaned we are impacted on the way we put information into the system and all this kind of stuff. Of course what happens with these things is the Lean process usually involves, say the [department] ... with no other input from other Departments in the discussion. And that is a very dangerous way to go about things, because if you are then going to try and get Departments to buy into it they ought to feel that they have had some input.”

7 of those interviewed suggested that they themselves could identify their own processes which needed improving, as opposed to being told which were to be improved and it being directed solely by the Lean Team. These thoughts came from both interviewees within higher levels of the hierarchy and from lower levels of the hierarchy and include;

“Lean is always happening inside anyway, you don't have to actually go and sit in an office.”

“I am of the opinion that in here on a day-to-day basis, I am always saying...“right” we'll sit down and we'll go “what's taking you forever? How can we do that better?”

“if we really thought about it, marked it out, you know did really the same idea as Lean we could actually do that in house rather than going to the Lean Team”

This viewpoint was shared by others who asserted that getting the grassroots more involved was *“real continuous improvement”* and that although (arguably) being seen as external is a positive for the Lean Team, *“sometimes they are very, very detached and what's really going on in the University world”*. Once again a conflict emerges as *“in order to better the process, you have to*

¹² Not counting the 2 members of the Lean team and one individual on secondment.

better understand the process” and therefore need a “team of experts” as opposed to facilitators with little in depth knowledge of the processes.

One of the other major concerns of individuals was that such process improvement which is in place is *“really not touching the surface. So I think the criticism is that the remit is not big enough, the team is not big enough and it's not real changes to surface change trying to make people feel better in themselves”*. Furthermore, the type of process improvements Lean sometimes focus on can have the resulting effect as being *“an imposition for other departments” and is not always “in the best interests of that department”*. This, once again, goes back to the lack of holistic approach to implementing Lean throughout the business process.

2.6.3 Lean Events

“They need to be a bit more engaged at this stage almost like project managers...for seeing things through, for analysing maybe a bit deeper...in order to bring things may be faster forward or maybe create the impression for people that actually we care and we own this with you until it is done”.

This section focuses on the perceptions that individuals have on the current design and implementation of Lean Events. It is suggested that this area is perhaps the most crucial to both future sustainability, and to the survival and integrity of the Lean Team. Some perceptions have already been discussed in the previous section, however this section concludes with an alternative design for process improvements presented.

i. Positive Perceptions

Five individuals interviewed commented on the positive opportunities Lean events presented for networking and collaboration, with one individual suggesting that they learned something about a process outside of their unit which they *“would never have had the opportunity otherwise to understand”*. This is an important part of knowledge transfer (vital to Lean) and allows individuals to form cross functional networks throughout the institution.

Furthermore, two individuals suggested that Lean Events were *“fun”* while one considered them *“hard work”* but acknowledged that this was still a positive part of the process.

ii. Negative Perceptions

The most highly contentious issue through the research emerged as the design and delivery of the Lean Events. A large number of interviewees had a number of positive comments and highly praised the Lean Team on the delivery of the Events, however some crucial negative aspects emerged which were seen by the researcher as an opportunity for the Team to develop their approach.

First and foremost, the design of the Event was cited by more than half of interviewees as being in need of a redesign. The main concern emerged as being the lack of individual approach to which the Lean Events are carried out. Currently centring around a 5 day workshop, some concerns emerged as being the following (note each quote is from a separate interviewee);

"You find you are there on the first day and you have that whole getting to know each other, and then you start mapping things."

"It perhaps needs to be three days long, you know cut out the whole getting to know each other and get down to business."

"I feel constrained sometimes by the way the methodology is implemented. I sometimes feel "well, how do you know that that is going to work better for us?""

Rightly so, a major concern of individuals is the time this takes. Although the Lean Team are aware of this concern, they tend to take a rather passive response to it. However, this is clearly creating barriers and resistance;

"Fun? I'm not sure! I think that's a bit of an exaggeration! Great fun? It's not that I don't like the whole Lean thing but I do find it quite intense, especially when it is five days all day every day."

"when I was doing the thesis submission I was sitting in Lean and actually had come back down here [to the office] to sort something out, now I don't think that's really quite Lean like is it?"

When asked what a potential solution to the problem of this design issue, many interviewees suggested that reducing the amount of time and focusing on the most important parts was crucial. Moreover, three highlighted that the "right" people need to be involved from the start and that the Team with the help of those involved in the process, must ensure that from the start the correct people are involved;

"We found with the [process improvement] the second day somebody from management decided to join us. We then had to sit and go the whole thing that we had done the day before"

"Also, it depends who was involved, I mean the people involved might not be very good at explaining what it is that they do. If the Lean Team don't have a clue as to what you are talking about, it can sort of stretch the whole thing out."

"well when we go to Lean the managers tend to dip in and out, it's usually people who are more involved in the process where there all the time."

"If there was some sort of way of working out exactly who you needed in advance, and getting them there...I think the whole thing is kind of needing that and is needing [to be] speeded up. It needs to be fast forwarded."

The importance which the Lean Team must place on getting the correct people involved also related back to ideas of operational efficiency and stumbling blocks. One individual suggested that there needs to be more collaboration happening when designing Lean Events and that "there needs to be more input from other departments to say "hang on; if you do this, it's going to result on further down the line". So if you can incorporate more people from a wider circle that can be helpful."

One individual stressed that without this holistic approach, or in depth understanding of processes, "a department goes up to be leaned and they come out the following week doing things and there is collateral damage and there are knock on effects". This was supported by another individual who

asserted that *“the blitz is all very well...but follow up is required”*.

One individual provided a very knowledgeable and comprehensive overview of the Lean Events, which is worthy of thought, therefore the full quote is as follows;

“For some of the units some things are obviously working better, where it works better let them take more of an initiative, don't be dogmatic with them! Have they found a slightly different application that in this context of Lean works really well? Why does it have to be a five-day approach, why? Maybe for Finance 2 ½ is good, then fine. It's the spirit and the deliverables that count, not whether you ticked all the boxes and crossed all the T's. I think they need to do a bit more flexibility and encourage that, and yes tailor the approach. Or in situations where they have an audience made up of different areas, where some people just don't know yet how to engage etc, they need to plan more than they need to own more than they need to analyse more. I think possibly they have standardised it a bit too much”.

Five individuals alluded to the fact that Lean is in fact *“just common sense”* and have asked whether they would be better off *“sitting around a table”* with management and designing their own processes with facilitation of the Lean Team as and when needed. This would be opposed to the current Lean Events which fail to deliver a tailored approach. However, many who suggested this were always quick to point out that removing them from their daily job is *“almost as if it is the only way”* to encourage redesigning of processes.

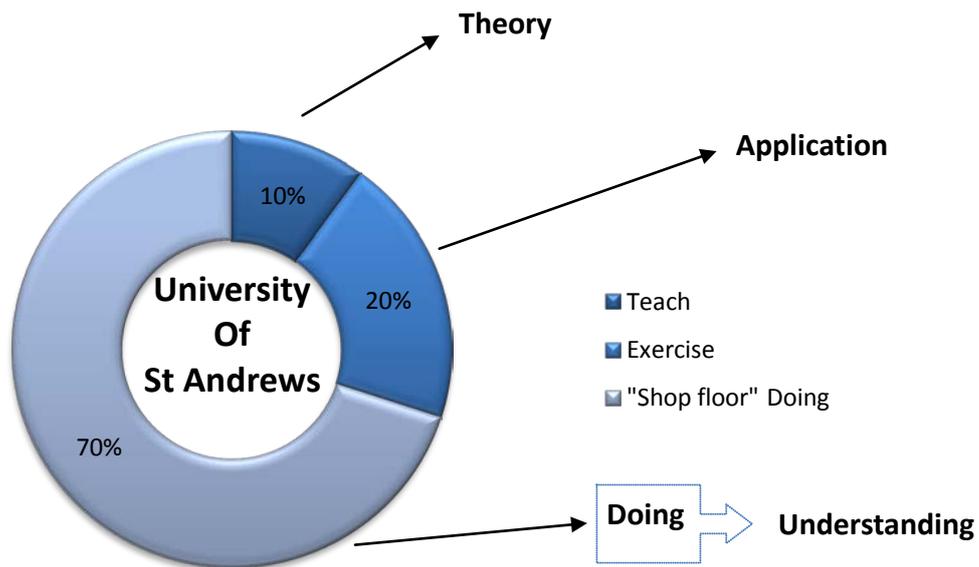
iii. Lean Event Redesign

This section focused on trying to highlight some of the concerns that a number of the individuals interviewed mentioned, although this cannot be generalised. What is clear from the research conducted is that the current 5 day “blueprint” blitz is no longer satisfactory, and that the Lean Team would greatly benefit from developing a shorter, more focused and more tailored approach to the design of their events. A greater knowledge and understanding prior to the event of the process itself is suggested, as is a better thought out understanding of the wider consequences of the process.

It is recommended that the term “Lean Blitz” is dropped in favour of the term “Lean Masterclass”. Masterclasses are common in Lean Organisations and entail both formal theory (education) and exercises (training). The need for some form of formal training is paramount in developing a true continuous improvement culture, and there is no evidence to suggest that by *not* educating employees in Lean, better results can be achieved. Therefore, *Figure 2* illustrates the proposed content of a “Masterclass¹³”. The majority of the event (c.70%) should focus on the “shop floor” doing i.e. implementation. However, both teaching (i.e. formal theory; c.10%) and exercises (i.e. application; c. 20%) should also focus in the workshop.

¹³ Adapted from a model currently used by a leading non-automotive global company based in the North East of England.

Figure 2 - Lean Masterclass



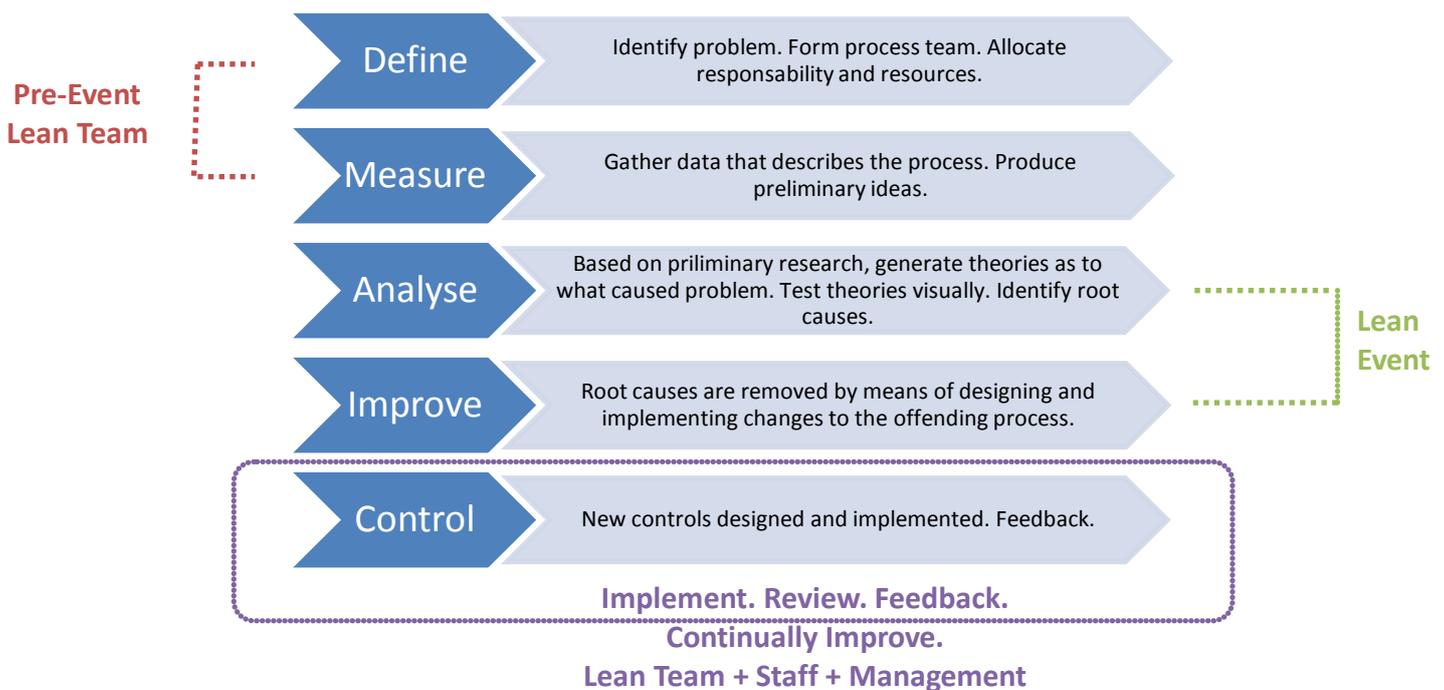
In terms of process improvements, the current evidence shows that (contrary to the belief of many) the Lean Team *are* currently only using the methodology of Visual Management & Workflow Diagrams in order to achieve Business Process Re-engineering (BPR). Although BPR is indeed a methodology under the “Lean” umbrella; this is one tool of many. Other tools can be summarised in *Table 2*.

Table 2- Summary of the main tools of Lean and Continuous Improvement

Visual	Statistical	Operational
<ul style="list-style-type: none"> • Current Reality Trees • Conflict Resolution Diagram • Future Reality Diagram • Transition Tree • Value Stream Mapping • Visual Management • Workflow Diagram • Ishikawa (Cause-and-Effect) Diagram and 5 Why 	<ul style="list-style-type: none"> • Lean Metric (Financial performance, behavioural performance and core process performance.) • LPI (Lean Performance Indicator is a consistent method to measure lean implementation effectiveness) • Value added to Non-value added Lead time ratio • Value Stream Costing 	<ul style="list-style-type: none"> • 5 S • Error Proofing • JIT • Kaizen • Kanban • Theory of Constraints (focuses the organizations scarce resources on improving the performance of the true constraint, and therefore the bottom line of the organization.) • Poka Yoke (Mistake Proofing)

It is suggested that participants are educated in a selection of these tools, and allowed to determine which to use on their own process improvement. Using Six Sigma methodology of Process Improvement (*Figure 3*) it might be suggested that the Lean Team design their processes using these five steps (*Appendix 2* for more detail).

Figure 3- Proposed Lean Event Redesign Structure



The first two, being “Define” and “Measure” would be the task of the Team *prior* to the Masterclass (pre-diagnostics). This will allow the Team to a) gain a greater **understanding** of the process they are improving, as well as define units of measures and, more importantly b) select a project team which must be **cross functional** of individuals who will both directly and indirectly have an impact. The “Measure” step will also allow for any boundaries to be drawn, and prepare a statement which will be discussed with the participants who will enter at the next stage. This pre-analysis stage is crucial to the future development of Lean Events. As opposed to adopting the current 5 day blitz approach, it is recommended that the Team take 5-7 days to familiarise themselves with Stages 1 and 2 (refer to *Appendix 2*).

Stage 3, “Analysis”, is recommended to be the point at which the actual Masterclass takes place in Lean Central. Prior to the Masterclass, a half day **workshop** is proposed which aims to allow the participants to familiarise themselves with each other (through teambuilding activities), allow the Lean Team to establish a **Chartra** with them and explain any data they have previously collected. This is a vital communications strategy. The key at this stage must be that the participants are given “homework” and encouraged to go away and build a process map for their individual activities, and to identify any strengths, weaknesses, opportunities and threats (SWOT) within the current process, before the workshop. This will not only enhance potential buy-in of participants, but also give them ownership, as well as allowing more time to be spent on the actual event. The event is where **theories** are discussed (refer back to *Figure 2*), brainstorming occurs (which currently takes place), theories are tested with the use of **visual aids**, and **root causes** are identified.

Stage 4 is the specific process improvement. The Team, ideally, is recommended to have developed a preliminary “answer” or “tool” (refer back to *Table 2*) to the improvement, however the participants are encouraged to use a tool and develop an approach which they think is suitable from the tools they have been presented with during their formal teaching. Also at this stage the **methods** for improvements should be drawn up, barriers identified and action prepared to limit

them (such as extensive training). The final phase of this stage is to **implement**.

The final stage focuses on **monitoring** the process improvement, which is recommended to take place in the form of feedback from both the Lean Team and members of the project affected. Attaining grassroots **feedback** emerged as an issues within some departments, therefore is vital to reducing resistance. It is suggested that 6 weeks after the Masterclass a “**Roll Out Plan**” is developed whereby the initial objectives are reviewed, and any other areas for improvement are identified. Moreover, the effect and implications of governance¹⁴ is reviewed and fed back.

2.7 Developing a New Culture

Developing a new culture is about changing mindsets, and is part of the aims of Lean within the University of St Andrews. Evidence shows that, although an ongoing process, cultures are beginning to change. One individual declared “*I think its early days but I do think that we have changed, I think we're working more together and communicating more together than we ever did before.*”

Developing a culture takes into consideration much of the outcomes of the previous sections identified in this report and have been identified as being based on;

- Lean acumen (an understanding of the continuous improvement/lean tools and techniques);
- Business acumen (an understanding of business issues);
- Responsibility and empowerment employees have been granted;
- Training which has (and notably has not) taken place;
- Motivations;
- Communication channels;
- Senior management and direct line managers, as well as their management style;
- The role of the Lean Team including the design of the Lean Events.

In order to create a culture of continuous improvement it is important that management style, leadership and performance management are monitored;

“Some people think [being Leaned] is almost like you are criticising them, you are saying you know “we are Leaning [this process]. But I want you to be involved because you're not doing your job right.”

“I can't actually think if [that department] has done anything... Everything must be working perfectly in [their] world!”

¹⁴ Governance is the use of consistent management, cohesive policies, processes and decision-rights for a given area of responsibility

Figure 4 Creating Continuous Improvement Cultures

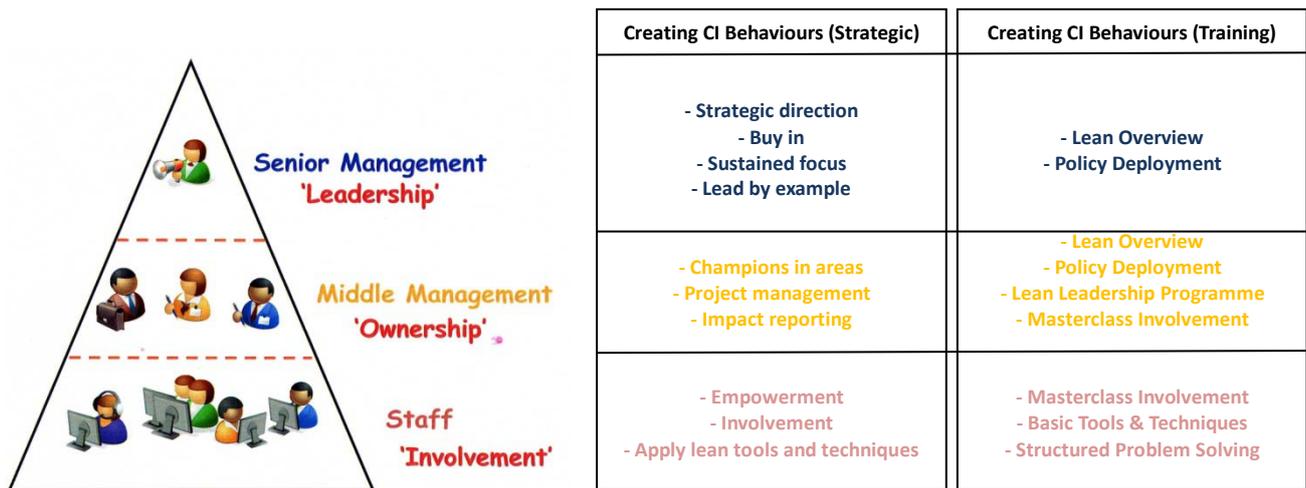


Figure 4 illustrates the different levels within the hierarchy, and how each should be helping develop a new culture. Senior Management must maintain buy in for the concept and lead by example. This must be sustained through the active involvement of middle managers who manage projects and become champions. The concept of champions emerged as an important way in which a new culture could be developed and (more importantly) sustained;

“One solution is to have Lean trained people to give an outline to how you might approach a problem, and how you might make it Lean”

“This organisation is full of intelligent people who will question all the time “is there any value in doing this piece of administration” which is great. That’s exactly what should be happening! We should be questioning!”

Finally, staff must be involved, empowered and educated to use Lean tools and techniques. Moreover, training must feature as key, with senior management being trained in an overview of lean throughout the organisation, and most importantly policy deployment. Middle Managers must all be educated in Lean, trained in Lean Leadership and engage in involvement in Masterclasses. Finally, all staff must be presented with the opportunity to attend Masterclasses, be trained in the basic tools and techniques and importantly trained in problem solving.

The evidence illustrate that Lean is not necessarily being communicated effectively; in parts perhaps a result of carrying out what appears to be a mixture of Process Improvement, BPR and Six Sigma. Lean encapsulates the human elements where workers engage in continuous self development through training, and continually enhance their skills and development. The Lean Team and Senior Management must ensure that these are inbuilt into the delivery of Lean, including looking at the wider picture and insisting on a system wide approach to Lean. Looking at specific processes is currently resulting in the “Respect for People” aspect becoming muddled, and individual’s not seeing continuous improvement (as opposed to operational improvement) as part of their jobs. This can be illustrated by the following example;

“They [a specific group] were asked to all get involved but none of [them] came to any of the days that we are at Lean. You know, they're the ones that are the first to phone us constantly with problems, and obviously they don't understand what it is that we want, and what we want from a student. Yet they were given an opportunity to actually present themselves and say what the problems were etc, but they just declined so to speak.”

This is highlighted by two individuals, from different business units, who both suggested that there *“is not much more we can do within our group”* which undermines a culture of continuous improvement, perhaps as a result of the focus on process improvement.

Perhaps the most difficult task the Lean Team have is changing this mindset, however, 100% of those interviewed did agree that culture was changing, albeit perhaps not using the most effective model, methodology, or approach in some cases. The culture is currently described as “old-fashioned” with one individual suggesting that *“if you look at the University on the whole I wouldn't say that we are yet fertile ground for the Lean concept completely embed in the fashion that we are trying to embed it”*.

However, there is evidence to suggest a measurable culture change is occurring within St Andrews;

If I think about it, I am applying the skills I learned in Lean within project management within my own team”

“One of the teams that had been Leaned were downstairs and they said “we're starting to talk like a Lean team!””

2.8 Summary

The findings can be summarised as follows;

- Understandings and **definitions** lead to the belief that “Lean” in St Andrews is actually Business Process Re-engineering or Six Sigma¹⁵;
- Following engagement with Lean activities **perceptions** were generally more positive;
- Lean must develop a **holistic** system wide approach to Lean process improvements in order to minimise stumbling blocks, such as IT services, within the processes of other non-IT units and departments;
- Lean Events positively increase the possibilities to **collaborate** and network with other departments and units within the university for the majority of participants;
- Individual process improvements can, at times, result in the end **customer** not benefiting from the improvement. It may be worth while conducting some customer surveys following process improvement to see if they are benefiting and if the workforce involved are adding

¹⁵ The Department of Trade and Industry (DTI) suggest a definition of Six Sigma is – *DTI suggest Six Sigma is “process improvement, process redesign, process management”*

value;

- Increasing **competitiveness** is not cited as being a crucial aspect of Lean, implying that the tool (i.e. BPR) and the concept (Lean) are being separated;
- The **respect for people** principle is not filtering down to the grassroots levels, and where it is, is it dependant on management style;
- On the whole as a result of Lean Events and process improvements staff felt much more **empowered** in their job, with a sense of responsibility. Those who did not, claimed the fault lie with regards to communication/consultation, and management style;
- Formal **training** is not only a vital ingredient of a Lean Organisation, but it is an element which employees interviewed feel would be a valuable and worthwhile process. Without a formal understanding of Lean (including its origins) barriers will exist. It is important that the Lean Team develop some form of in-house formal training to schools and units;
- Managers must ensure that they are positively **rewarding** good behaviour. By doing this, it could be argued that it will encourage employees to embrace continuous improvements. However, this could have the negative effect and therefore should be integrated into an individual approach on a unit-by-unit basis;
- The effectiveness of **communication** is currently uneven throughout the University. Managers must ensure they effectively communicate with their staff, and gain their input, in order to achieve buy-in. As opposed to the Lean Team deciding which processes should be Leaned and communicating this via email, grassroots must have more ownership;
- It is undoubtedly important that **Senior Management** is committed to Lean as this provides validation for the philosophy. However, the Lean Team must take care not to be seen as “one of them” due to their close relationship and hierarchical placing of the department being so close to SMT¹⁶ and Principals Office. Moreover, while it is a success that departments are embracing Lean, departments who do so to please the SMT do not constitute a success or a culture change. This is, in fact, creating a culture of fear that if they do not embrace the events they will lose out. Participation must be participatory and not due to feelings of being enforced;
- **Management style** is cited as the most contentious area, with various factors such as motivation, communication, engagement and levels of empowerment being dependant on management style;
- **Line managers** must ensure that they communicate with their staff from the initial phases of process improvement, and involve them in decisions regarding which processes to Lean. This will increase buy in, and if used effectively, following feedback can help embed a continuous improvement culture;
- Participation in Lean events must be **voluntary** not forced, this includes participants being

¹⁶ Senior Management Team

involved in which processes are Leaned, and in the development and deployment of appropriate process specific tools for improvement. This area could perhaps be the most potentially high-risk factor for the future development of Lean, and for the attainment of a full culture change under the umbrella “Respect for People”;

- Barriers, or **resistance**, to Lean vary according to individuals and departments, and it is impossible to generalise the main barriers. From an operational point of view, a lack of a system wide approach to Lean is causing some barriers for departments who are trying to embrace Lean. In order to reduce such barriers, the entire organisation must be “Leaned” as opposed to Process Improvement on an individual level. In terms of individuals, each worry must be dealt with appropriately by managers. Managers must seek to align individuals’ goals and motivations with those of Lean, perhaps through a comprehensive performance management system (also see section on Performance management & Reward). Managers must also gradually introduce new management practices in order to minimise resistance to change;
- The **Lean Team** are seen as being approachable, enjoyable to work with, and bring their own unique approach to Lean. The Team were praised on their styles and personalities, however some argue that the only success of the Team is as a result of those personalities;
- Perhaps more **knowledge** of Human Resource aspects is perhaps needed, especially when approaching divisions within the University who are shy of Lean. The Lean Team tend to focus on process improvements, and although using the term “Respect for People” would perhaps benefit more from driving this aspect in order to reduce barriers and enhance buy-in etc.;
- The Lean Team fail to take an individual **approach** to understanding processes, and lack the depth of analysis of processes many participants think is necessary. The Team are at risk of being seen as not understanding the needs of the department or unit.

3.0 PART THREE – Recommendations

Following a review of the findings from the 22 interviews, the following recommendations can be proposed.

1. *The Lean Team must develop a more individual approach to delivering their service.*

Many individuals felt that while the Lean Team delivered, on the whole, an exceptional service and there was no question regarding their expertise and dedication, the delivery of the service must be individualised much more. As opposed to delivering a “blueprint” programme consisting of a 5 day Blitz, it is recommended that the Lean Team take the time to research the unit and their processes, and to shorten the workshop time from the present 5 days to a suggested 3 day “Masterclass” workshop.

Not only would this reduce the stress of individuals who are currently been taken from their core jobs for a week, but it would allow a much more focused Masterclass to take place and more specifically, to be more applicable to those attendees and that department. Those who are taken from their jobs *must* be relieved from the duties their core job, therefore the role of line managers and communication with them becomes crucial.

The recommended structure can be seen in Section 2.6.3 (iii). This has the following positive implications:

- Trust between unit members and their perception of the Lean Team would increase;
- More motivation to participate in the workshop when attendees feel that they are attaining a specific, individualised outcome
- Increased benefits as units are unique, and therefore their approach to lean will remain unit specific
- Symbolic as Lean is seen as enabling as opposed to enforcing.

It is also recommended that the Lean Team adopt a more empowering method for delivering Masterclasses. The Team should (through prior planning) have planned out process improvements and supplied the group with 3/4 different tools, but allow individuals within the group to take on responsibility for suggesting outcomes themselves. This can be done through Reverse Psychology¹⁷ whereby the facilitators engage in dialogue with participants, in order to steer them in the direction of what they have planned, yet the participant feels empowered in the sense that they have initiated the idea themselves. This will be a very powerful psychological tool (and break down of barriers).

2. *The Lean Team to adopt a more holistic approach to the Lean concept.*

Currently, the adoption of Lean appears fragmented, both between units and within units. The Lean Team must ensure that in order for units to adopt the concept that they work harder to ensure the effective engagement of all units. Lean can only succeed if the University and/or Lean

¹⁷ Reverse psychology is a persuasion technique involving the advocacy of a belief or behaviour that is opposite to the one desired, with the expectation that this approach will encourage the subject of the persuasion to do what is desired: the opposite of what is suggested

Team take a holistic approach. Lean is about more than singular processes, it is about a system wide approach to intervention or entire business process. It is therefore recommended that Lean moves from being a Process Improvement, into being a system wide intervention of the entire business process.

The benefits of adopting this approach are;

- Enhanced synchronisation within and between units;
- Less of a reliance on the “underperforming” IT service Unit;
- A move away from being seen as a directive from the Finance Director and more towards an organisational approach.

3. *The Lean Team must ensure that they communicate better with the “grass roots”.*

Many individuals at grassroots level feel that they are being forced to carry out Lean. The idea of Lean is that it is a bottom up approach. The Team must work hard to ensure that individuals at all levels understand the essence of Lean, and understand it to be a part of their jobs (CI). It is therefore recommended that the Team enhance their communication across the University of the successes of Lean, future developments and to encourage a forum (not just of “pro” participants but also “against” participants) whereby individuals can communicate ideas for improvement.

In the first instance, it is recommended that the Team do this on a Unit-by-Unit or a School-by-School basis, establishing networks within each section entirely focused on discussing Lean, process improvement, people efficiency. It is then suggested that the Team form collaborative networks between departments and units in order to enhance communication with the grassroots. This is opposed to the current system which appears to favour communication through line managers, which has ultimately relied on management style.

4. *The Lean Team to conduct a Masterclass on Lean for unit heads, managers, and line managers. Moreover, a focus on Training employees must be introduced.*

Many problems have arisen when asked to define Lean. It is important to bear in mind that Lean was (and still is) a manufacturing concept. Erasing this history undermines the value of Lean (indeed an alternative Higher Education institution currently implementing Lean sends their employees to an automotive plant as part of their training). The Lean Team must ensure that individuals involved in Lean processes understand the meaning of Lean from a theoretical perspective. Senior Managers must provide “leadership”, middle managers “ownership” and staff “involvement”.

Many definitions revolved around process improvement; however Lean is about standardising a product or service, promoting and enhancing core competences and enhancing the quality of a product or service. It is therefore recommended that all middle and senior managers have an overview of Lean and policy deployment, with middle managers also being trained in leadership and Masterclass involvement. All staff must have a basic knowledge of the tools and techniques, and vitally problem solving skills.

On the one hand, the approach St Andrews take creates a unique “St Andrews Way” and makes the philosophy more applicable to Higher Education. However, on the other hand it makes it difficult to define whether the University is implementing Lean at all or rather a concept of

operational improvement under the umbrella term “Lean” as there is no training beyond the basic tool of visual management and process improvement.

Furthermore, training must be used by line managers or department managers to directly engage in Lean and to communicate it within their department. Managers must become more of leaders. What is surprising is that employees currently undergo no formal Lean training, with many interviewees suggesting that they feel they would benefit from such training. Lean must be formalised in regards to training (see Section 2.6.3 iii for recommended redesign of training). It is recommended, therefore, that units start to send individuals on training courses ran by the Lean Team (as opposed to Blitzes) in order to increase understanding of Lean, and to give them the knowledge and autonomy to use Lean thinking within their jobs.

5. *The Lean Team to expand their portfolio and consider consultancy work.*

The Team must now broaden their horizons as they are in danger of becoming a “one trick pony”. The nature of business, organisations and competition is moving fast and therefore the Lean Team must keep up-to-date with advances within industry which can, and are in other institutions, being brought to Higher Education. It is therefore suggested that the Team take on consultancy work, initially within Higher Education (perhaps within more service focused areas such as Libraries) which will encourage a more individualised approach as a blueprint process event cannot be used in such an instance.

The benefits of this to the University may include;

- Enhanced knowledge of Lean and service efficiency in other HE institutions;
- Collaboration between institutions (as is currently taking place within the Finance departments of Scottish HE Institutions as a result of Lean) encouraging the spread of ideas;
- Increased status of the Lean Team and therefore validation;
- Increased revenue for the University which can be used to subsidise and expand Lean within St Andrews University;
- Up-to-date knowledge of other industries and management styles.

6. *Lean must be re-branded.*

The Lean Team themselves, amongst others, admit that there was a false start at the beginning of the project, which has taken time to eradicate and perhaps will not dissolve totally. It is therefore suggested that for the new academic year, the team make a conscious effort to re-brand themselves using some of the recommendations suggested above to aid this. Lean must be branded throughout the University as a “no qualms” option. There must be no alternative; it must be system wide and apply to the entire business process, not sections. In order to encourage continuous improvement (and in the long term the output of cost savings, sustainable management practices and enhanced competitiveness) Lean must be considered as the correct, and only, approach for all. The proposed new methodology and Masterclass structure may be a good starting point for re-branding the philosophy.

7. *The Lean Team to consider relocation*

The potential risks to the future development of a holistic approach to Lean throughout the University may include the current location of the Lean Team within College Gate. The Team is

currently at risk of being perceived as acting on behalf for the Q&F and other members of the Principals Office. In order to promote Lean throughout the University, it is recommended that they distance themselves from the Principals Office in order to be perceived as being more neutral, therefore consider relocating themselves away from College Gate. The Team must be seen as being accessible, and acting on behalf of the individual Units/Schools/Departments in order to successfully create a culture change whereby employees are on board, have trust in the team and (critically) are engaged.

3.1 Summary

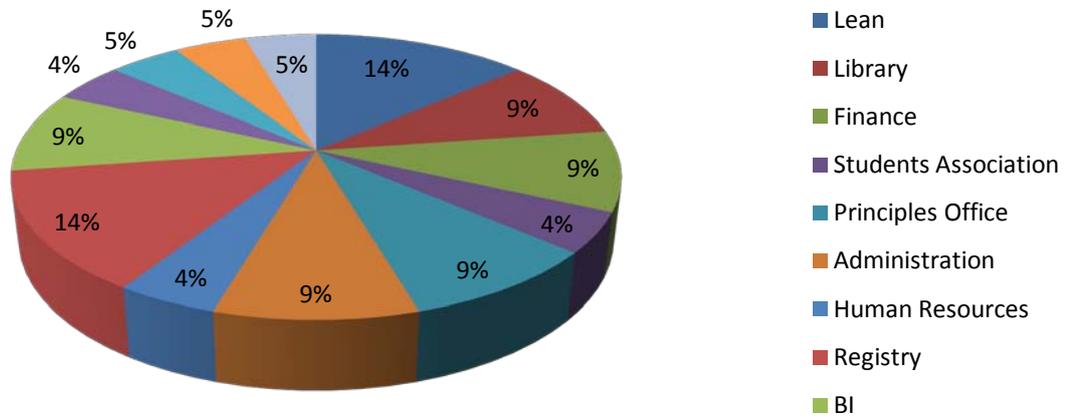
In conclusion, the University of St Andrews must actively pursue a holistic approach to Lean, and continue to filter it throughout the Universities Schools and Departments, initiating long term culture change. Lean must be inbuilt into people's jobs, and they must be given responsibility to carry out continuous improvement activities through empowerment. Training and development must feature more prominently, as must the role of line managers as being leaders. Communication must be improved at all levels. Blitzes must become Masterclasses, whereby participants integrate "theory", "application" and "doing" in a tailored approach to problem solving. Participants must be given the choice of a few tools and be devolved the responsibility for developing a new process improvement themselves in order to take ownership. Lean must start to penetrate the entire business process with the aim to increase quality and customer satisfaction.

A useful retrospect of the importance of building a true culture of continuous improvement can be found in the following quote;

"Lean doesn't always have to lead to change; I mean things could go off on a tangent, if that's going to be beneficial for the customer then it doesn't have to be a big change. As long as it is something!"

Appendix 1

A graph to show the range of Schools and Units who participated in the research



Group	Count
Lean	3
Library	2
Finance	2
Students Association	1
Principles Office	2
Administration	2
Human Resources	1
Registry	3
BI	2
HoS	1
RBS	1
Conferences Group	1
Estates	1

Appendix 2

Stage	Action	Process	Notes
1	Define (Lean Team)	<p>Prepare a problem statement describing the problem in specific terms, what is wrong? What is the visible evidence? Must be expressed in quantifiable and measurable terms.</p> <p>Prepare a mission statement describing what is going to be done, i.e. the objective of the improvement project</p> <p>Select a project team consisting of a cross-section of individuals both directly and indirectly affected by the project.</p>	<p><i>Lean Team develop a specific understanding and start designing potential improvements from their knowledge</i></p> <p><i>Understand the problem through pre-diagnostic analysis</i></p> <p><i>Consideration of the holistic approach to Lean</i></p>
2	Measure (Lean Team)	<p>Symptoms of problems are identified and a baseline measurement of current and recent performance is established.</p> <p>Develop operational definitions</p> <p>Define boundaries i.e. the scope of the process improvement</p> <p>Revisit mission statement and modify as necessary</p>	<p><i>Symptom in Six Sigma is defined as “the outward, observable evidence of a problem”</i></p> <p><i>At this point the Lean Team should have developed an individual, tailored approach to delivering the Lean Event</i></p>
3	Analyse (Lean Team) (Participants) Direct and Indirect	<p>Formulate theories through brainstorming with the team using cause and effect diagrams and visual management.</p> <p>Test the theories using any data that has been collected and visual management including mapping</p> <p>Identify the root causes once testing has been completed the root causes should be able to be determined.</p>	<p><i>Specific focused brainstorm and analysis of the problems within the process, taking a holistic approach and based in part on preliminary research the Team has conducted, and on their past experiences.</i></p> <p><i>Must be initiated by participants and participants must be encouraged to design the process themselves (ownership)</i></p>
4	Improve (Lean Team) (Participants) (Snr.Mgmt)	<p>Evaluate the alternative improvement methods and disregard as necessary.</p> <p>Design the improvement meeting the aims earlier identified.</p> <p>Plan for cultural resistance such as individual attitudes, motivations and identify and training needs as a result.</p> <p>Prove effectiveness by presenting to senior management</p> <p>Implement and communicate the benefits</p>	<p><i>Lean Team must ensure that methods are taking into account the wider issues and implications on other departments and unit.</i></p> <p><i>A focus on the People aspect including identifying leadership necessary, training and development and any performance management needed</i></p>
5	Control	<p>Evaluate linking back to governance</p> <p>Feedback loop system through a <i>Roll out Plan</i></p>	<p><i>Engaging the Lean Team, grassroots and line management in an ongoing dialogue of feedback</i></p>

(Adapted from Department of Trade and Industry model of Six Sigma)

About the author:

Emma is currently a 3rd year PhD student, researching the *“Transferability of Lean Production in the Public Sector”* at Newcastle University Business School. She is working with public sector organisations, higher education institutions, pharmaceuticals and Nissan Motor Manufacturing (UK).

Emma is also a Teaching Assistant, teaching within the Human Resource Management and Organisational Behaviour group.

Emma completed her Bachelor’s degree in 2004 in Management and Information Systems at the University of York (UK), attaining a 2:1 degree and a first in her Dissertation titled *“Multiskilling: How Japanese Automotive Manufacturing companies use Kaizen to enhance the skills of their workers.”* Emma also attained membership to the Chartered Institute of Management (CMI) while at York.

Emma then completed a Masters degree at the University of Teesside Business School in Human Resource Management accredited by the Chartered Institute of Personnel and Development (CIPD). Emma gained a distinction in her Dissertation titled *“How Nissan Motor Manufacturing (UK) use Continuous Improvement within their Human Resource Management Systems”*.

Emma also worked full time as a line manager within retail while completing her Masters, eventually moving to a Teaching Assistant once she started her PhD.

Emma has since completed more training courses and has gained a Postgraduate Certificate in Research Methods and is working towards her Certificate of Advanced Academic Practice. Emma is also a member of the British Academy of Management (BAM), Academy of Management (AOM) and European Operations Management Association (EurOM) as well as working towards membership of the Higher Education Academy (HEA).

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