

BEST PRACTICE GUIDE

Establishing Process Improvement Capability in an HE environment



Universities and Colleges
Information Systems Association

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Introduction

Higher Education (HE) is a complicated sector, and universities may seem unusual places to implement methodologies from the private sector. However, the experience of many staff suggests that learning from other sectors can be a highly successful way of enabling positive change.

Process improvement activity is increasing in UK universities, partly in response to calls for increased effectiveness and efficiency but also as a response to today's rapidly changing political and economic environment.

This Guide seeks to evidence what higher education organisations are currently doing to embed process improvement capability and to support those considering undertaking such activity or those already doing so.

It forms part of a set of UCISA project and change management publications, including *Establishing a PMO in an HE environment*.

Overview

This report is based on two main pieces of research conducted in the summer of 2016. The first of these is a survey sent to UCISA member organisations and circulated around the Lean HE Community of Practice.

This Survey was the basis for creating a four stage model to help understand how process improvement capability is built, including:

1. the initial formation
2. initial formation to business as usual
3. business as usual and
4. the attainment of maturity

The second piece is a series of short Case Studies that explore further these four stages in the context of five very different institutions.

Through this research, we have identified a descriptive maturity model and a number of trends in terms of how institutions have established capability. Reference is included from leading academic work detailing the kinds of abilities needed at the critical early stages of building abilities, and a reading list is included for further information.

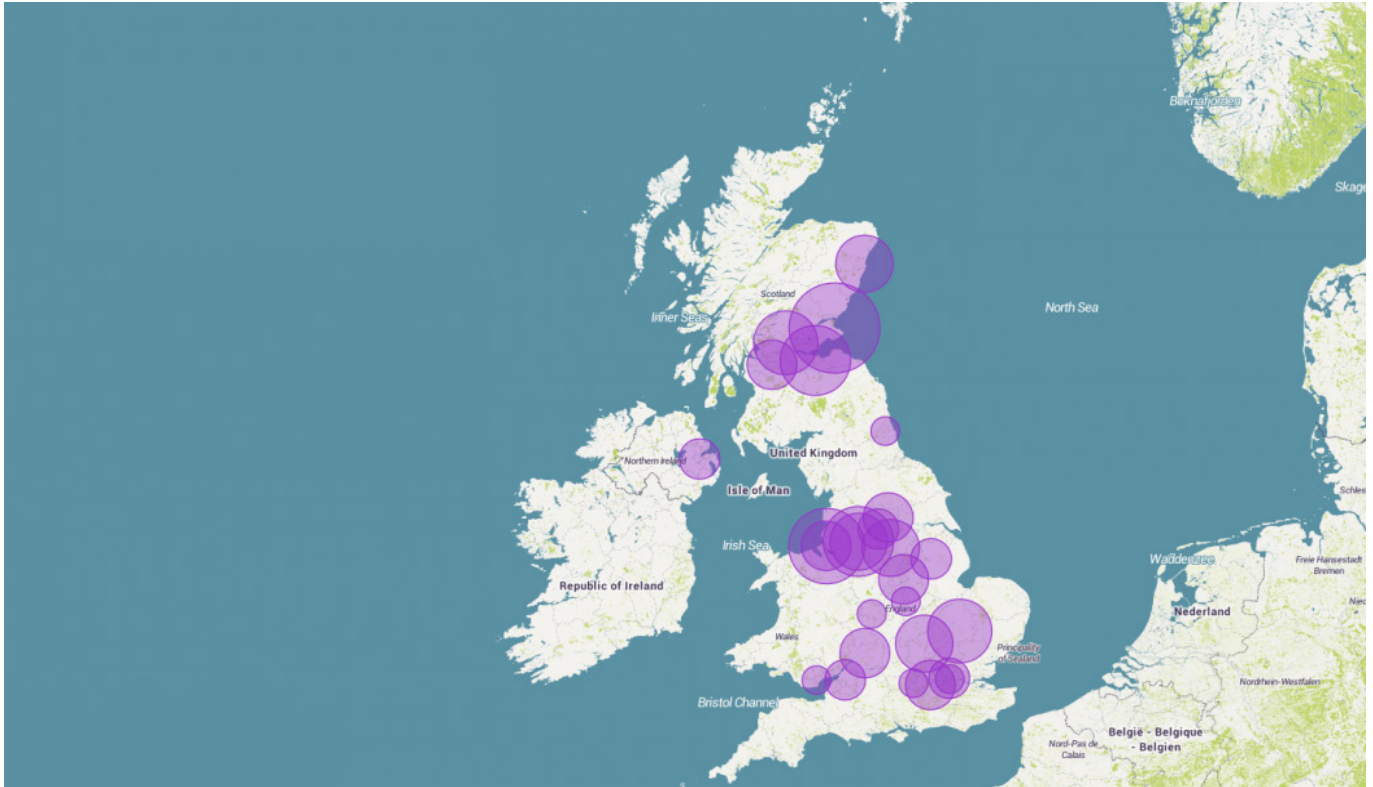
Colleagues from the college sector should note that the primary research data for this guide was taken from universities, but that broad lessons should be applicable to their institutions also.

We hope that this Guide acts as a prompt to support people managing change in their institutions to establish capabilities for business process improvement.

About the survey

The survey was conducted over the summer of 2016 and attracted 45 responses. Seven of these were from outside of the UK and have not been included in the analysis of data, although they do provide an interesting view of what can be achieved in different national contexts.

About the survey respondents



Map of UK survey respondents, indicating the relative time that current process improvement capability has been in place

Fig 1. Map of survey respondents indicating relative age of initiative

Of the survey respondents, 27 of them were aware of current dedicated capability for process improvement within their institution, and 10 were not.

Earlier activities

When asked whether any earlier business change activities or projects had been established in their institutions, the majority of respondents indicated that there had been. The named approaches that had previously been experienced included Quality Circles, ITIL and Project Management. Some of these were characterised as continuing and currently supporting business process improvement activities, but other initiatives were no longer sustained.

“There was an Operational Excellence team [...] this was disbanded after 2–3 years for a variety of reasons. Unfortunately, the team were not given the brief to support the implementation of changes, so there were a lot of workshops to identify improved processes, but no significant implementations.”

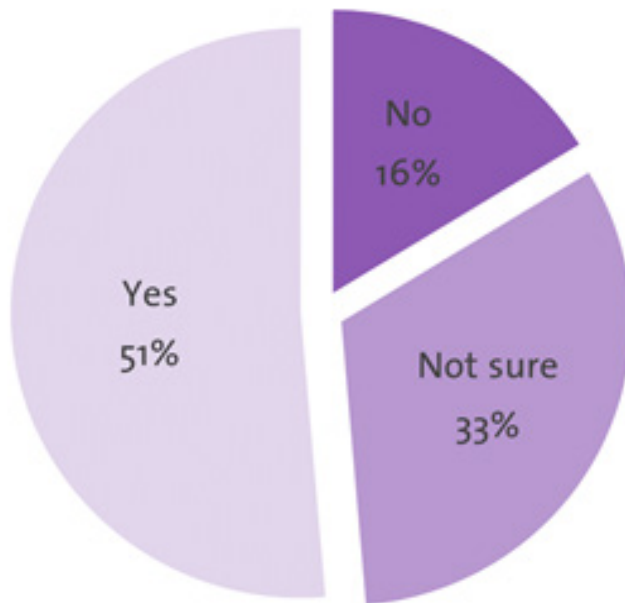


Fig 2. Question: Have there been earlier business change activities or projects?

About the Case Studies

The five Case Studies are drawn from universities of varying types across the United Kingdom: Post 92, Red Brick and Ancient. Representation from two Russell Group institutions was included, as well as the two earliest examples of Lean type activity in UK HE: Cardiff University and the University of St Andrews.

Building capability

Reasons for starting out

A number of drivers were cited within a business case for establishing process improvement capability. The primary reason was to drive effectiveness and efficiency within the institution, with student experience being the second most reported driver.



Fig 3. Drivers for Establishing PI Capability

Finding the expertise

Two main ways are reported for creating process capability in an HEI – recruiting expertise into a role and using external consultancy services. Other approaches included using internal academic resources and advice from staff members who had previous process improvement practitioner experience.

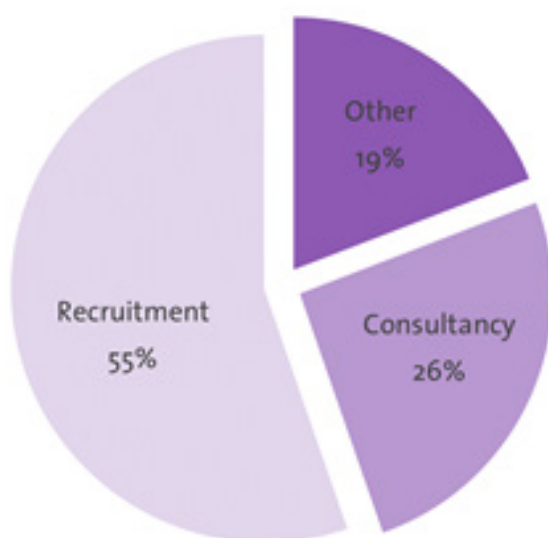


Fig 4. Question: *How was capacity created in your institution?*

Locating the service

There is some interest in where staff members leading process improvement activity are located, and this is contentious item for the business case and resourcing. In UK HE, the key areas where process improvement is located (in order of frequency) are as follows:

1. IT
2. VC's/Principal's/Executive Office
3. Human Resources
4. Planning
5. Finance

According to the data, the status of process improvement in IT is correlated with some of the early adopters of process improvement, and later adopting institutions tend to have a broader spread of process improvement across different functions.

While information services (IS) is clearly a key leader in business process improvement, the data indicates that IS does not necessarily need to be the leading organisational partner, and the survey responses could be skewed by the respondents from the UCISA mailing list primarily coming from an IS background. Indeed, one survey response suggested being *owned outside of IT* as a critical success factor.

Staffing resources

Number of staff

Process improvement capability tends to be based around a small team of expert staff. From the data collected, the average team size is a mean of 3.4 full time employees (FTEs). It is not unusual to have one individual with responsibility across the institution. There does not appear to be a correlation between team size and number of years established; that is, process improvement capability does not necessarily grow as the function reaches maturity.

The data collected for this document focused on centralised resource, the number of staff in universities with process improvement capability in some informal form can be expected to be higher than the formal resource reflected in the graph below.

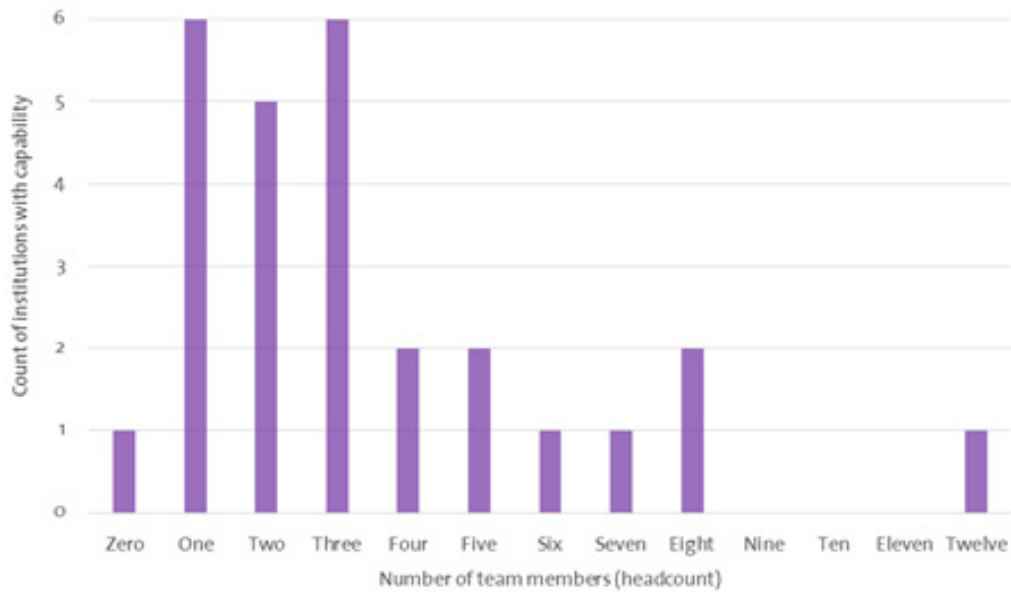


Fig 6. Number of institutions with team sizes (headcount)

Job titles of staff

The job titles of staff members who are leading the process improvement are also diverse. Word count analysis, illustrated below, suggests *Improvement* and *Business* are the most commonly used terms.



Fig 7. Process improvement practitioner job title word frequency analysis

Non-staffing resources

There appears to be a great deal of variation in the resources available to HE process improvement practitioners. Given that most teams are small, establishing links with other institutions and organisations is needed, and the utilisation of communities of practice within institutions and the use of both internal and external web pages are growing. About half of the respondents have dedicated meeting space for process improvement activities.

1. Membership of external networks, associations or professional bodies
2. Budget for improvement activities
3. Web pages
4. Community of practice (within the institution)
5. Dedicated meeting space
6. Resources library
7. Process mapping IT system

There may be bias in the data collected, given that the Survey data was collected via people that are members of external networks.



Fig 8. Resources identified as used by respondents, scaled by proportion used by respondents

Developing process improvement capability: initialising practices

Contribution from Oliver Jones, Principal Lecturer, Leeds Beckett University

Process improvement capability at Leeds Beckett University has been developed in conjunction with academic expertise by an action research intervention. Capability can be classified as sets of activities, also known as practices or routines. In simple terms these are things people in organisations should be good at in order for their organisation to develop process improvement capability.

The research project investigated what these critical activities were and how they could be developed. The research aim was configured to support and focus on the birth to infant stage of process improvement in a particular area of an organisation. This was a bottom up and down approach as both a contrast and a complement to the notion of macro management, also known as critical success factors, for the deployment of process improvement in HE and public sector organisations.

The findings in Leeds Beckett University identified a small number of actionable practices that process improvement agents should be doing with participants and actors in a process improvement field or activity. These are shown within a *nexus of practice* in the figure below, with enacted practices represented as black lines.

The research showed that each practice is a positive interaction, in the sense that enacting one practice will potentially enhance the others that it is related to. The nexus was framed to consider those practices which can be enacted with process improvement agency. Additionally, the research showed that enacting these gave rise to a set of secondary positive practices. This latter group of desired practices includes empowerment, trust and open relationships, and a process view. It was identified that the choice of methodology used was not as important as having a clear pathway that agents and actors could all understand and follow.



Fig 9. Nexus of practice at initiation

The research also identified a difficult transition for process improvement practitioners – that of moving from constructing a process map of an existing process to that of understanding why a process behaves as it does, and working with the map throughout the chosen methodology to an improved process. The work showed that within the literature the descriptors of practices related to process mapping were not sufficiently discriminatory, and as a result not as helpful as they could have been in relating to practice. Therefore, the table below was constructed and refined to help practitioners identify how these practices are differentiated but connected in a broadly sequential fashion suggested by the nexus analysis.

Process related routine/practice descriptors	Descriptor
Defining and mapping a process	Defining the boundary of consideration for a particular process or set of processes.
Developing a process view	Processes are something one thinks and talks about. Processes are identified. Work by individuals is seen as a step in a wider process, and that the way work has been accomplished, and why can be identified, and changed.
Working with a process map	Sharing and subsequent corrections, revisions and clarifications of a process map with process actors and stakeholders.
Process analysis	Analysing process outcomes and determining root causes for process behaviour.
Process and map (re)-construction	Work within processes, and processes themselves can be standardised and/or improved in some way.
Process management	Process owners are identified (and given responsibility) and there is adherence to a defined process. There is ongoing monitoring of both process performance outcomes and key determinants with appropriate targets and warning indicators.

This allows actors and agents to discriminate their activities so that they are enacting the right practice at broadly the right time in the improvement activity, and that each practice can form a gate and connection to the next one.

Success factors, impact and challenges

Impact

One might expect the impact of process improvement capability to link with the drivers for establishing capability. From the Survey, it was interesting that the impact of process improvement was slightly different. Improving effectiveness and efficiency was still the main impact, which correlates with the business drivers. However, staff development and the development of a continuous improvement culture in the institution are also important and perhaps surprising outputs.

Impact	Number of respondents who agreed
Improve efficiency	15
Staff development	10
Developing a culture of continuous improvement	9
Provides stable, consistent resource to support improvement	8
Shared understanding of process across the institution	7
Cost savings/ROI	6
Staff ownership of processes	5
Improved student experience	4
Rapid change	4
Support IT projects	2
Develops change management expertise	1
Supports staff wellbeing	1

Success factors

A number of success factors have been identified to ensure the effective use of process improvement capability with a university.

Perhaps unsurprisingly, university leadership support/championship was identified as the major factor for success. The authors question whether this factor is different for process improvement establishment or whether establishing any area of activity in an HEI benefits from leadership support.

Other key success factors that were identified included; management buy-in, the need to evidence the benefits of process improvement, and the assurance of staff engagement across the board.

Challenges to establishing capability

The Survey identified a number of challenges to establishing (and maintaining) process improvement capability.

Survey respondents were primarily process improvement practitioners, and the challenges to establishing capability reflect this. A further piece of research identifying wider perceptions of challenges, including from the perspective of senior university staffs would perhaps add further categories and/or change the weighting of some of the responses.

The data collected identified university culture, an appreciation of process improvement activity, appropriate resources and staff buy-in as the main critical factors in establishing capability.

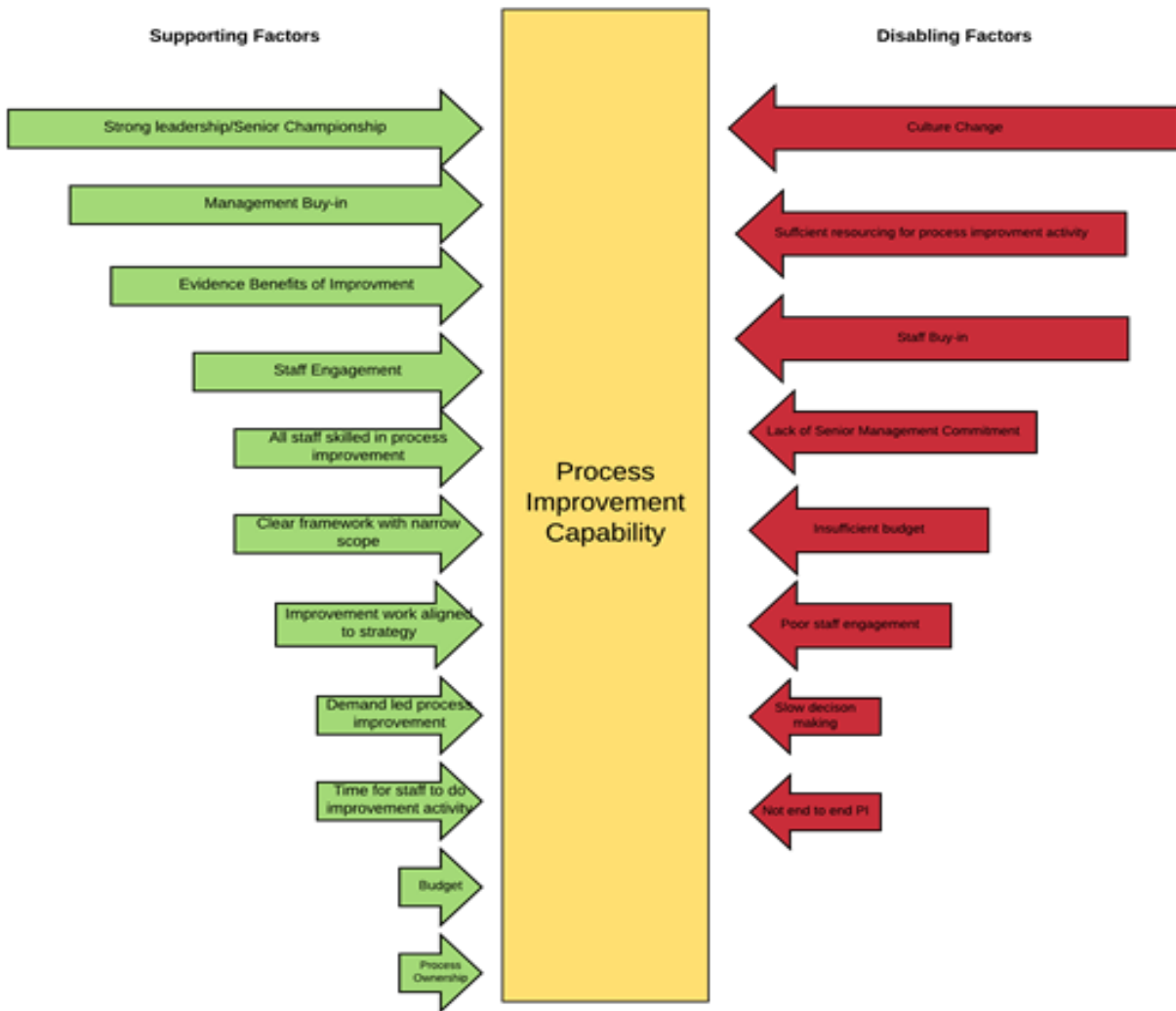


Fig 10. Factors that affect the establishment of Process Improvement Capability

Maturity Matrix Model Process Improvement Capability in Higher Education

This model has been created from data received through the Survey and Case study responses, and it aims to describe the characteristics of process improvement initiatives at four stages of maturity. *Characteristics – Essential* were identified in many if not all case studies, as well as in the Survey data. *Characteristics – Possible* were mentioned in a number of case studies and/or emerged as a pattern in Survey data.

Stage	Characteristics – essential	Characteristics – possible
Initial formation	<ul style="list-style-type: none"> Funding for staffing Business case Identify initial projects or workshops Run pilot sessions/projects/ workshops Communication plan 	<ul style="list-style-type: none"> Find out what other people are doing Employ consultants Standalone/limited activity Establish a steering group Resources e.g. room for workshops Senior management for advocacy process improvement Budget – initial funding
Evolving capability	<ul style="list-style-type: none"> Run projects/workshops Stakeholder management Create model of operation/develop framework 	<ul style="list-style-type: none"> Communication across institution Identify use of language – agree what is appropriate for the institution Create training/coaching plan/courses for institution Create website Create work request process Involvement with external networks Learn from initial successes and failures <i>Ad hoc</i>/standalone evidencing of benefits
Business as usual	<ul style="list-style-type: none"> Pipeline of work Acceptance of methodology/approach across the institution Training/coaching for university staff Provide ad hoc process improvement advice and support to university staff Demand led requests for work Create standard approach to evidencing benefits of improvement Senior management enthusiasm for process improvement 	<ul style="list-style-type: none"> Internal community of practice Provide case studies in the sector Budget – formal funding
Maturity	<ul style="list-style-type: none"> Evidencing benefits of improvement activity Continuous improvement of standard model Involvement in strategic projects Process improvement of primary processes (teaching and research) Senior management endorsement of process improvement approach Senior management demonstrates use of process improvement approach 	<ul style="list-style-type: none"> No need for separate resource, all staff using process improvement approaches External consultancy reference to improvement in university strategic plan

Case studies

Case study 1: The Open University

Initial establishment

In our University we had an appetite to experiment and see business improvement delivered but a very mixed level of understanding as to how it worked and in terms of the expectations on the business itself.

In the very early days, we employed consultants to advise and run some initial sessions but quickly moved to recruiting and developing our own in house team (now 12 FTEs).

We developed organisational process heat maps to flag potential *biggest bang for the buck* areas with the maximum possible impact to draw up a priority list. We also picked a couple of good, solid and well sponsored test cases to prove the concept and to gain credibility and reputation. Much of the activity since has been driven by a more reactive agenda.

Our mode of delivery has consisted of large project interventions. Sometimes we have as many as 6–10 on the go – other times, it may be just one big intervention with multiple work streams using the entire team. Most of our projects are 12 weeks plus interventions which stop at a set of recommendations and a road map for delivery. This modus will be shifting over the coming months to include rapid improvement events and training and development to foster a wider continuous improvement culture.

From initial establishment to business as usual

In our first year or so, we were developing our *modus operandi*, recruiting and establishing the team (five FTEs in the first year) and running the first few projects to gain credibility and deliver an impact.

I would argue that we do not have a business as usual (BAU) status though. We are called on a regular basis to help on high level strategic interventions with very short notice, so a regular BAU plan has never formed.

We help people understand what we do through briefings to senior managers on the overall service and delivery of projects to gain that reputation and understanding. We plan to start a more active roll out of Continuous Improvement (CI) best practice and training in the coming months.

We knew we had established reputability, as we had high demand for our services from members of VCE and gained the approval and funding to build the team further increasing future capacity to meet that demand. We have also demonstrated a consistently high return on investment in terms of quantifiable and unquantifiable benefits, capacity generation, cost avoidance and opportunities for efficiency savings.

Now that business as usual has been achieved

As stated, we do not really have a BAU state. We have operated in a very flexible and agile model so that resources can be deployed at short notice on strategic priorities. This is likely to change over the coming months with a clear pipeline of work, but we will remain a valuable strategic resource that needs to respond rapidly when asked.

It is sometimes challenging to provide resources for certain activities, given the pulls on our time. Normally, we try to have consultants working in pairs and covering more than one project at a time – but that is not always possible or appropriate. The lead time to set up a project can be considerable and can then be disrupted or wasted when we have to change direction and move to something else to meet a new priority.

Further improving business as usual – reaching maturity

Into the future, we are looking to mix more Rapid Improvement Event (RIE) and small pieces alongside the strategic pieces – this should be more flexible, more rewarding the staff and have a more rapid impact on the business.

We have learnt that lots of misconceptions exist about what a Business Improvement team is there for and can do. It is sometimes a challenge to get buy-in and for the business to deliver on the recommendations and output and there is often a need to support them through that change, which is not always sustainable with resources available. Therefore, different implementation models need to be explored and refined.

Finally

I would say it is good to get external advice, but building an in house team with a sense of ownership (*real skin in the game*) and a commitment to the organisation is important. Having the right people in the team is a key element – establishing your capability and credibility through slow and steady growth and ensuring there are no weak links. The challenges of the public sector combined with those of academia, fear of change and *passive resistance* are significant, but with the right team in place, giving the right messages and with appropriate sponsorship they can be overcome.

Case study 2: University of St Andrews

Initial establishment

I would have talked with other universities doing Lean, but at the time that St Andrews started, they were few and far between. Attending relevant conferences would have helped, but again, they were scarce. What surprised me starting out was the ambivalence of many senior staff members and that not everyone wanted to provide a better service.

In terms of the resourcing we started out with, we had trained staff, a *Lean room*, and the usual items, such as furniture, computers, stationary, a projector, a screen, and lots of free tea, coffee and biscuits.

When it comes to people, to begin with, volunteers were found, in the military sense. After a while, once some quick wins had been realised, people were more willing to proactively engage.

Starting out, we supported individual Lean projects following a standard 8 step process, which included a five day rapid improvement event. These projects included a training element, among other things. Standalone training sessions were also delivered.

In the first year or so, we were developing our approach, trying things, going back to the drawing board and gaining acceptance across the institution, ultimately delivering some very good outcomes.

We generated an understanding of what we were doing by delivering training sessions and publicising project activity and Lean basics via a dedicated website (www.st-andrews.ac.uk/lean). We engaged with staff at every opportunity.

It took perseverance, learning from our mistakes and working with our senior management champion to lead us to the transition where Lean was BAU. And running successful projects helped.

We knew we had reached a good stage when the initially resistant senior managers asked us to work with their staff, when staff told us that they had run their own Lean projects, when staff asked to borrow our Lean room (e.g. to map a process), and when senior staff asked us to work with them using Lean tools and techniques on activity that was not related to process improvement.

Now that business as usual has been achieved

The challenges we have faced have included having a lack of upcoming projects and becoming stale in that we relied too much, perhaps, on the same tools and techniques. That being said, we have successfully created an acceptance of Lean across the institution.

We have managed resourcing, when it comes to our staff, by ensuring that the workload has not exceeded capacity and by employing additional staff. As for financing, until recently, this was supported by income from external consultancy. These funds were more often than not used for *extra* activities, such as attending conferences.

We have made very little change to our initial mode of delivery, other than getting better as we become more experienced. New tools and techniques have been introduced as they have been encountered. However, alternatives to our standard 8 step model are in development to meet different needs.

I would say that in creating capability, the right people are needed. They need a person centric attitude and personality more than qualifications and experience.

Finally

It is not easy and it takes time. Practitioners should investigate what other HEs have done, find an approach that will fit their institutions and avoid reinventing the wheel. They should also enjoy the journey; they will learn a great deal about themselves and their institutions.

Case study 3: Newcastle University

Initial establishment

Improvement activity had not previously been coordinated across the institution. This led the University to recruit externally to build an internal capability, housed within the planning and finance function. The initial investment was modest – namely, shared office space, access to workshop space, hardware/software and website space.

I spent the initial induction period meeting most of the senior management team within professional services and listening to them as they described their existing operations and issues. The Deputy Vice Chancellor and Registrar were instrumental in driving what strategic projects they wanted to drive forward initially but, following further discussion, I developed a model to capture improvement project requests in a more structured manner.

The Registrar's *Value for Money Committee* provided support for the initial proposal of a model (based around DMAIC) by which an improvement website and mailbox provided channels for anyone in the university to raise process issues requiring further investigation.

From initial establishment to business as usual

The activity was split between one major improvement project and some complementary smaller scale change and coaching activities by which some skills transfer could be provided. This was supported with the development of the website and resources, together with a sustained effort of around six months of attending multiple faculty based committees to introduce the new capability.

Initially, three work streams were resourced at any one time. They comprised a major project of a longer duration (up to 12 months) and two supplementary work streams (with 4–13 week rotations). These were resourced with one FTE and complemented by part time support secondment employees from the related operational units. The projects have mainly followed the DMAIC approach and used the appropriate improvement tools as discussed with stakeholders during the scoping stage. Examples include current and future state process mapping with improvements centred on Lean principles.

After gaining agreement for the approach, I spent a huge amount of time on University wide engagement activities. Having met with most senior officers in professional services and the different faculties, I began receiving requests for coaching support for both groups and teams. Having created the content for these initial sessions, I was able to provide team session covering basic improvement methodology, alongside some change that the units wanted to own and deliver with some light touch support. I also became involved in supporting the University's annual *Chameleon Programme* managed by the Staff Development Unit. This combines management development training for participants with the opportunity to work as a part of a small project team on a business improvement project. These efforts increased exposure for the next capability, providing a cohort of managers with skills that could be reused directly in their units.

Now that business as usual has been established

The actual delivery of projects helped the team transition into BAU. When smaller work streams in CPD, International Relations and Student Exchanges, started to deliver results, further requests for engagement started to create a food chain for future activity. The delivery of the initial major review project (Research Administration) has led to a further strategic review project into Post Graduate Recruitment.

This progress occurred mainly through involvement in the activities already detailed and through regular reporting to the senior officers group each month. Through the visibility established over the space of the last year, we have become the first port of call for improvement support. It was also important to be sustainable from a resourcing perspective, and the registrar supported a request for a further colleague to be recruited to enable the improvement support of more than one strategic project at once.

Resourcing can still be a challenge. Colleague availability and space to conduct workshops can also be a challenge, particularly where the unit area is under pressure (sometimes the trigger for requesting support in the first place).

We also have a small budget to outsource discrete projects where appropriate, recognising that each project requires an appropriate and sometimes specific approach. Delivery tends to focus on current and future state mapping in workshops with larger groups or side by side mapping observing the process and then supported by team validation. Standardised mapping templates have been introduced. All deliveries include an element of skills transfer. We now take a milestone approach to a larger strategic project to enable improved integration with wider programme plans alongside the wider change teams (e.g. IT).

Finally

Practitioners should never assume that all stakeholders are starting from the same baseline. Stakeholders will build momentum for progress, once they can relate to the benefit in doing so. The key is engagement and ensuring that the institution has both a will and has recognised a need for this capability. The sooner the team can deliver tangible benefits, the more that recognition for the capability will develop and become self-sustaining.

Case study 4: Cardiff Metropolitan University

Initial establishment

A business improvement services (BIS) team was established in January 2015. The team contained staff with hybrid roles, having either a primary focus on business analysis or project management, with the ability to carry out both functions. We needed practical space to hold workshops for the numbers of staff members we were working with, and we needed an appropriate working environment that supported visual management (e.g. whiteboards and a projector).

When starting out, there were two things that stood out. Firstly, the University did not fully understand what was meant by process improvement and, secondly, the number of processes that could benefit from the approach e.g. paper based, manual data entry. In hindsight, we would have spent more time with stakeholders to explain terminology and to increase their knowledge.

The activity in this area has always been led by demand. In projects that were already initiated, process improvement tasks were identified and incorporated into the project deliverables. A change request process was established, in which staff within the University could make a request relating to processes and systems. Support was given from senior members of the University to our approach to enhancing process improvement.

Our mode of delivery could be described as a mixed economy. We have worked on large strategic projects that have incorporated process improvement into the project scope. We also work with small change requests or process reviews at the request of units and schools. We are currently working on developing the capability of staff in the University through a training programme and task shadowing, as well as concentrating on the quick wins that bring small but effective incremental improvements. This is a significant shift from the pursuit of perfection in projects towards continuous improvement.

From initial establishment to business as usual

Our first year was spent developing a framework for project management and business analysis and, from this, producing specific guidance on key activities (i.e. stakeholder mapping, process mapping, requirements gathering, scope definition, embedding governance and establishing reporting framework and cycle). Effort was spent on promoting BIS and engaging and communicating with stakeholders who were asking for support. BIS worked with them on delivering process improvements in those areas.

Our transition from formation to BAU was rapid. A programme established to deliver efficiencies accelerated the service, and once the change request process was in place and staff knew the services we offered, we quickly moved from concept to practical application.

To create an understanding of what we do, we spoke to stakeholders, included them in conversations and asked for their feedback. We demonstrated techniques and skills in workshops and in project delivery in a practical way. Successes in these areas were shared with a wider community and used to promote what could be achieved.

We are still establishing BIS as a team that provides project management and business analysis services to the University. We know we are on the way to being *established*, as people seek our services on their own.

Now that business as usual has been achieved

We have found that the challenges to maintaining the activity include the following:

1. The demand is high for our service, and this puts pressure on the capacity and resources within the team to deliver change.
2. It is important to keep our approach flexible and to make sure we can adapt our techniques and our approach in ways that are appropriate for the environment.
3. Some areas within the University still do not see the benefits of the service we offer.
4. Transferring the knowledge and skills to staff in the University is necessary to increase the scale of resources.

Ongoing activity is resourced through the core staff in BIS, supported by temporary contracts when required. We provide training and mentoring staff to the University to ensure that the techniques can be repeated.

When it comes to the difference we make, we have seen changes and process improvements implemented. One example was working on an early module selection process which has seen a reduction in paper and earlier information for schools. The projects are structured, and an emphasis on early analysis work has increased the project's chance of success, as work on process mapping, requirements gathering and so on are managed at the beginning.

Further improving business as usual – reaching maturity

When it comes to changing our mode of delivery, all activities are reviewed and any changes are implemented. Reviews are held within BIS and through feedback from our stakeholders. We are constantly looking at ways to improve our service in conjunction with staff.

We have learnt that it takes time and that success does not occur overnight, but when staff members have been engaged with the activity, they see the benefit and can apply it to other areas.

Finally

1. Have senior management buy-in/sponsorship.
2. Talk to people – find out what they want and identify tools and techniques to help solve their problems.
3. Demonstrate through the delivery of the tools and techniques, and make small improvements one at a time. Do not try to immediately work towards the ideal solution – it is a step too far. Repetition is important.
4. Set expectations with staff – their commitment and time will contribute to workshops, meetings and change – without this, there will be no improvement.

Case study 5: Cardiff University

Initial establishment

Lean University at Cardiff started in 2006. We were given £1/2 million of funding from then Vice Chancellor, David Grant to carry out the three year programme. This money funded a team of four FTE researchers in the Lean Enterprise Research Centre (LERC) and a central team of four FTE practitioners based in the Strategic Development division to deliver change on a daily basis.

A soft launch was intended, but in reality, there was greater awareness of the Lean University programme than we had anticipated. In hindsight, problems arose because of the different focuses of the two teams. Although we worked well together, the research interest of the LERC researchers caused some difficulties in terms of perceived speed of implementation from the central team.

The Lean University programme was split into three different types of improvement work. The first was an attempt to introduce policy or strategy deployment within all of the work areas. The second type involved large scale end to end value stream management projects. The third type consisted of smaller scale problem solving projects that were initiated in response to a stakeholder push for continuous improvement.

The strategy work started with the planning department. The three main end to end improvement projects that we launched were *Supporting Research Funding*, *Procure to Pay* and *Programme Approval*. The original aim of these initiatives was to, in some way, come into contact with every part of the University, but in hindsight, these projects were simply too large and affected too many people to be completely effective and manageable. Continuous improvement projects worked well because they solved issues that affected people on the ground, and the line management of these issues was contained, so the actions were implemented in a relatively straightforward manner.

From initial establishment to business as usual

Given the pioneering nature of the Lean University project, the first year was largely spent trying to understand how to apply Lean thinking within this *new* university context. The project's strapline was *lightening the load*, the key premise being that members of the staff can make their jobs more fulfilling and enjoyable by engaging with the improvement work.

Through our early work, it became clear that the language of Lean was an issue. Students and academics as *customers* provoked interesting and challenging discussions amongst the project teams. It also became evident that to enact

change within a university, the underlying change process itself needed to be improved. For example, when significant changes were suggested and permissions required, teams would have to wait for quarterly meetings and boards to convene to accept the proposed changes.

A key enabler of change proved to be the establishment of the Lean Skills for Managers programme. This education initiative was designed to provide senior managers with the improvement tools and skills needed to lead change within their work areas. This proved to be a successful method of subtly incorporating Lean ideas within everyday management, moving away from discrete project work.

The programme became established when managers from this programme started to tell us about the improvement work that they had led, rather than the Lean University team being actively involved.

Now that business as usual has been achieved

In terms of challenges encountered within the Lean University project, it could be seen that they are very similar to the frustrations and roadblocks experienced by any kind of change initiative. Shifting strategic priorities and *new initiative fatigue* had their roles to play, as did a failure to convincingly measure the improvements that were achieved. The project teams often declared that the initiatives were successful and that customers and staff were happier, but it was always difficult to quantify these improvements.

The Lean University's activities have now been subsumed within a new business analysis and project management function within the University's IT services division. This has enabled a greater focus on measurement and the realisation of project benefits. Vice Chancellor Colin Riordan launched a clear strategy for the University in 2012, called *The Way Forward*, which has enabled a clear focus and determination to achieve significant improvement in research, teaching, international work and engagement. Clarity in terms of the deployment of a series of key metrics has encouraged involvement in change at the highest level.

Further improving business as usual – reaching maturity

When practitioners examine how Lean thinking is evolving, it makes perfect sense for university improvement to be housed within IT because perhaps some of the biggest service improvements can arise from embracing and implementing new technologies.

We know that a major service improvement trend is automation and self service, as students and staff appreciate being in control of data and processes, and much can be done to alleviate the administrative burden, so I am hopeful that a shift to improvement via an increase in technology will bring about several step changes in customer experiences.

Finally

The three key pieces of knowledge from Lean University for me were, firstly, how the degree to which measurement is critical in the Lean improvement process. It is very easy to start visualising problems and new ways of working, but it is critical to be able to concretely say that we made a process that *used to take 42 days but now takes 4*.

When the implementation team is new and just starting to understand how to enact Lean change in a new context, it is far better to just focus on one small project, manage it well and learn from it, rather than starting multiple initiatives which become hard to manage.

The final learning point for me is the importance of learning itself. Our Lean Skills for Managers programme was a turning point, both in terms of helping the programme to be more than just the work of the change team itself but also in helping the change team to have a better understanding of Lean and change itself. It is often when educators have to teach concepts and ideas that they a) really begin to understand them and b) develop confidence in their own abilities, which develops their skills as facilitators of change.

Conclusions

Establishment model for process improvement capability

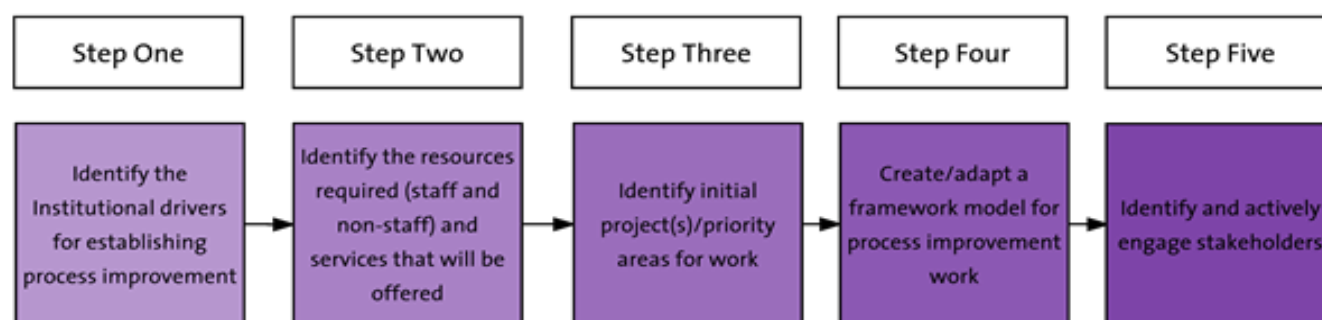


Fig 11. Establishment model

Process improvement and Information Services

While the Survey and Case Study data supports the assertion that the link between improving processes and technology is a strong one, especially given today's digital universities, the research completed to create this guide does not imply that the IS department needs to take sole responsibility for business process improvement activity.

While some clearly feel that the IS department is the wrong location for this kind of capability (and it should be recognised there are benefits and disadvantages to any organisational location), clear evidence suggests that successful teams can work in IS. This success appears, however, to be linked with the use of a good method and approach, supported with developed people skills and learning.

Perhaps the question of whether the resource should be located in the IS area is the wrong one; regardless, the ability to support improvement processes using new technology is clearly not a trend that is likely to fade.

Leadership

Leadership is clearly important, as case study contributors and Survey respondents consistently name senior leadership support as a key to success.

However, there are examples of bottom-up business process improvement, where individuals or small groups of people working within enough authority have been able to make a significant impact on their institution.

Perhaps this would suggest that while leadership is a key factor, this leadership could be displayed by the people involved in the process improvement, using positive momentum and influencing skills to support bottom-up change.

Impartiality of service

One theme that has emerged is the importance of the business process improvement activity offering an impartial service.

The importance of impartiality appears to relate to the role that improvement teams often take in supporting genuine cross functional improvement. Successful Business Process Improvement can be challenging to established internal structures, and have an impact on existing organisational power structures. There is a role for the business process improvement practitioner to *speak truth to power*, which indeed may be why practitioners value the support of their senior leaders so highly. The importance of offering an objective service is perhaps emerging in response to an increasing pace of change felt in institutions and driven by external factors.

One respondent put it bluntly, when describing an initiative which they viewed as less than successful, *"It is now being led by core university staff who may be coming to the area with an agenda to deliver for senior management. We don't have confidence that they are impartial or are fully on board with real change"*.

International view

While this report has focussed on building capacity in the UK sector, a number of respondents gave us data about their journey, primarily from universities based in North America.

For these institutions, the challenges and opportunities shared broad themes with their UK counterparts, although the organisational structures were very different. Indeed, according to these respondents, the approaches taken to applying business process improvement varied enormously, with one team resourced with upwards of 20 staff. Further research in this area could be insightful and support our thinking about change in the UK.

Improvement without dedicated BPI capacity

While the UK sector is recognised as world leading in process improvement, a large proportion of UK universities do not have established process improvement capabilities.

Process improvement activity can be done in a number of ways without internal expertise.

This can include reading and having individual staff members who are self taught in process improvement tools and techniques, consulting with other universities or external consultants or using academic expertise that is in the institution. Sector evidence suggests that a wealth of improvements can happen without the intervention of process improvement professionals.

It should be a challenge to improvement practitioners to be able to evidence not just that their activity is improving processes, but that their activity is improving the rate of improvement at a level that justifies the investment made in their capacity.

Primary business processes

As has been suggested by this and previous research, the current initiatives in HE still appear to focus on secondary, or *back office*, business processes rather than the primary business processes of HE (i.e. teaching and research).

However, some notable exceptions include the development of a Lean Faculty at the HAN University of Applied Sciences in the Netherlands, as well as more targeted improvements in the United Kingdom. Regardless, the scope of improvements so far is overwhelmingly in administrative processes.

Of course, the relationship between the backstage and front of stage in HE is critical. While having an excellent invoicing process does not make a world class university, clearly, teaching would not be practical if the students could not find their classroom. To truly have excellent institutions, both these sides of the organisation need to be working in harmony. This is a real challenge worthy of significant further exploration.

Purpose and people

If process improvement is to be sustainable in the long term, beyond establishing capacity, a deep understanding of the purpose of universities, in all their diverse, sometimes maddening complexity, is key. Only when this purpose is clear can processes really be optimised. Perhaps universities' divergent purposes, by themselves, limit the ability of process improvement.

The other half of the key to successfully sustained improvement is utilising the people we have, which requires a deep trust and respect for people. With external threats and an internal political environment, this too can appear to be an impossible challenge.

From the data gathered in this Guide, it is clear that across the sector many people are working together to make their processes better. It is also evident that they are working to improve how this is achieved. In this way, business improvement practitioners can continue to build the strengths of our institutions and better support the people our organisations serve.

Further reading

Efficiency and Effectiveness in Higher Education, A Report by the Universities UK Efficiency Task Group, September 2011

Balzer, W.K. (2010) *Higher Education: Increasing the Value and Performance of University Processes*. Productivity Press, New York

Hines, P. et al (2011) *Staying Lean: Thriving, Not just Surviving*. Productivity Press, New York

Lawrence, H and Cairns, NJ. (2015) *Best Practice Guide: Evidencing the Benefits of Business Process Improvement in Higher Education*, UK: University of Strathclyde

Yorkstone, S (2016) *Lean Universities*. In: Netland, T. & Powell, D. *The Routledge Companion to Lean Management*, Routledge, ISBN: 978-1138920590. Forthcoming.

Zeithaml, V.A., Parasuraman, A., and Berry, L.L. (1990) *Delivering Quality Service: Balancing Customer Perceptions and Expectations*. New York: The Free Press

Useful websites:

<http://www.leanhe.org>

<http://www.ucisa.ac.uk/groups/pcmg>

<http://www.jisc.ac.uk/guides/process-improvement>

Appendices

Appendix 1: The University of Cambridge Business Change Consultancy Agreement



UIS Business Change Consultancy – Discussion Document

Introduction

The Business Change Consultancy service is a new function which is being created within the Education, Administration and Student Services (EASS) division of the UIS. This service is available both internally within UIS and externally to the wider collegiate University and can provide advice and guidance on many aspects of business change management as well as working with stakeholders on more detailed business change projects.

Engagement with the wider University will be via the Relationship Managers; requests will be prioritised via the work request process (*under construction*) and any such engagement will be based on an agreed assignment brief.

Pre-requisites

The establishment of a work request management process which will facilitate the identification and prioritisation of activities.

Service Definitions & Service Types

Services are available both internally (UIS) and externally (wider University) and should be requested via the Relationship Managers. Charging for services will depend on the size of the project (in terms of number of man-days) and will be at the charging rate of the assigned resource.

Business Process Improvement

Incorporates one, or all, of the activities below:

Full (Scoped) Business Process Review

In order to achieve efficient and effective operation, application of business improvement methodologies (e.g. Lean, Six Sigma) to understand, analyse and recommend improvements to business processes. This will include the identification and subsequent evaluation of benefits.

Facilitated discussions – Problem Identification/Solving

The provision of an impartial facilitator to bring together stakeholders for a targeted discussion which aims to define the nature of a business problem, identify the root cause and agree an approach to deliver a solution.

Problem definition

Where more complex problems are being experienced, the application of formal problem definition techniques (e.g. brainstorming, lateral thinking, root cause analysis) will provide focus and clarity on the nature of the issue, so allowing future identification of possible solutions.

Deliver Business Change and Realise Benefits

In some cases changes to business processes arise as a result of external factors (statutory changes, major IT System implementations etc.) and as such process owners may require help to understand what the new process will look like (including gathering requirements), as well as how to make the transition from “As Is” to “To Be”. Significant work may be necessary to establish new ways of working and gain stakeholder buy in.

To support this transition, benefits must be identified at the outset and measured as a result of an embedded period of new process operation.

Requirements Definition and Management

High Level Business Process Requirements Gathering

In order to fully understand the scope and size of a proposed project it is important to clearly specify the business requirements, so allowing

Benefits identification and Realisation

Continuous Improvement

Enabling staff across the Collegiate University in the skills and tools to work in a continuous improvement environment.

Provision of Training in Basic Business Process Analysis

A two-hour training course which provides a basic understanding of the components of business process analysis which can be delivered to individuals and groups, followed up by focussed sessions as the delegates undertake mapping projects.

Provision of Business Process Mapping Software (including supplier liaison)

The current preferred software for mapping business processes is Process Navigator by Triaster (<http://www.triaster.co.uk/>).

Licences are available on application at no additional cost; however there is a pre-requisite for Microsoft Visio. Training and support in the use of the software is provided.

Fulfilment Services

A number of activities are supported by the Business Change office. These include:

- QA Management of Process Library



UNIVERSITY OF CAMBRIDGE

Information Services

- Investigation of new techniques and methodologies

Interaction with UIS Divisions

Interaction with University

Interactions will be brokered by the relevant Relationship Manager in the first instance.

Resource Requirements

Limited resource is available within the EASS division (1 FTE) however where work has been requested and can be funded, resource will be bought in either from within UIS or via external means (contractors). All resource working on projects within this area will report to the Business Change Manager and will use the tools and methodologies as agreed with that role-holder.

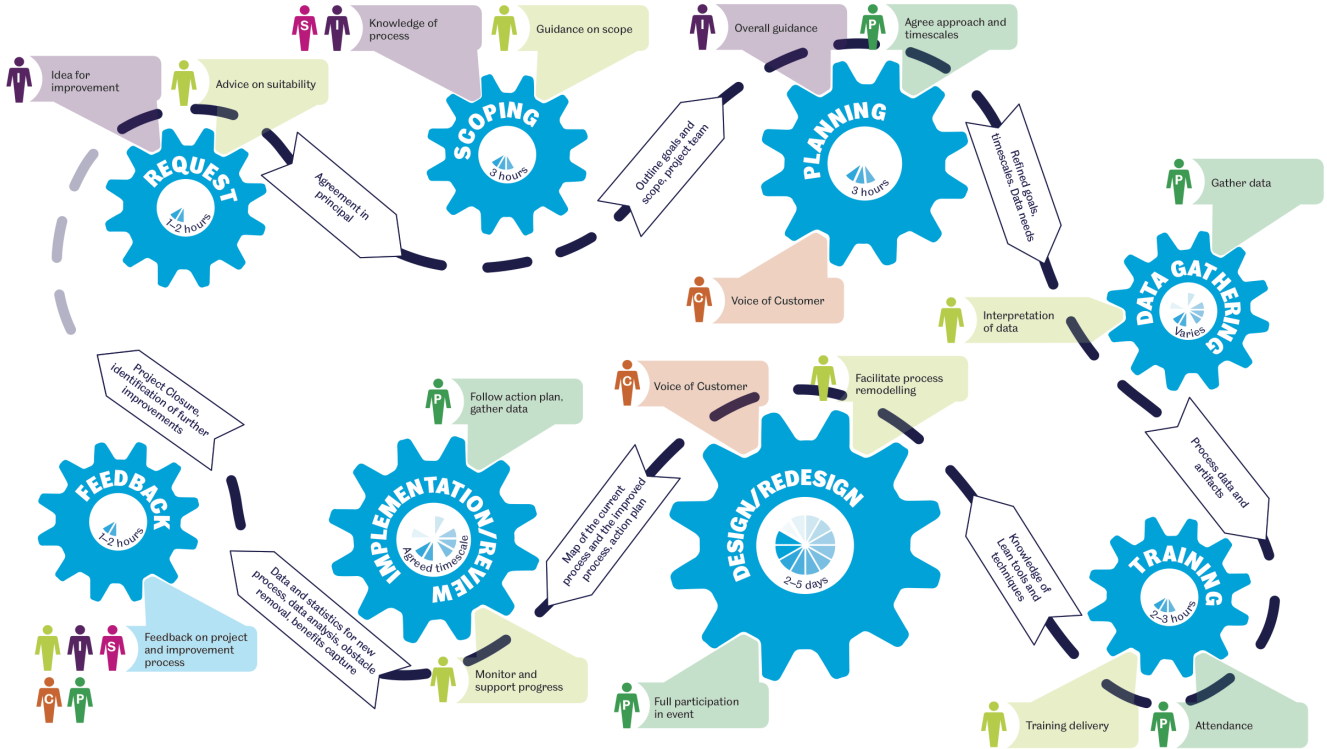
Workload management within this function will be overseen by the Senior Relationship Manager (Academic Division) on consultation with the Deputy Director – EASS and the Deputy Director

Appendix 2: The University of Sheffield Model

Process Improvement

We're here to help the University run the most efficient processes it can, so that more of its resources can be spent on learning, teaching and research.
 We do this by using an approach, usually called 'Lean', which helps you to find and eliminate unnecessary waste, to improve the 'flow' of the work, and ultimately to provide a better service for your customers, whoever they may be.

People



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