



## Robbie Ewen Fellowship 2013

Report on study trip to the USA

23-27<sup>th</sup> September 2013

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Visited institutions:

**Notre Dame University**

[www.nd.edu](http://www.nd.edu)



**The Pennsylvania State University**

[www.psu.edu](http://www.psu.edu)



## Acknowledgements

I would particularly like to thank Carol Mullany of University of Notre Dame and Barbara Sherlock of The Pennsylvania State University who both prepared comprehensive and interesting itineraries for me and whose generous hospitality was gratefully received. Also to all those who gave up their time to meet with me and share their experiences during my visits.

Many thanks to the Robbie Ewen Fellowship Trustees and to Abertay University for providing funding. I am also indebted to the Director of Operations and the University Secretary at Abertay University for supporting my application and giving me the opportunity to make the trip.

## Background

In light of current economic environment and future funding challenges, the Higher Education sector must recognise the need to become more effective and efficient, and at the same time reflecting the demand for value for money from our students. Scottish and EU students may still receive the cost of tuition in the form of support from the Scottish Government, but the rest of UK and international students are acutely aware of the cost of their education. As a result, the dynamic has changed, students realise that they are now customers – purchasing a service – and as such their expectations and demands will require HE to respond by ensuring the quality of the offering.

By embracing modern practices and reviewing our processes, reducing wasted time and resources, HE institutions can better devote their attention to teaching, learning & research. Abertay University have made the first steps, by mapping out business structure and related processes in detail, but understanding how real improvements can be affected in an educational context using Continuous Improvement (CI) methodologies will be necessary to progress this further.

Abertay University embarked on a one-off project in 2012, called the Business Improvement Project (BIP). I was seconded from my post as Senior Administrator in the Estates & Campus Services team to join the project team. The project sought to map the processes of the support teams, including the academic school offices, to catalogue those processes and talk to colleagues from all sections about their work. BIP took two approaches; the first mapped out the processes of each department, and in cataloguing them sought to identify gaps in process, single points of failure and commonality between departments. Secondly, the BIP team also ran workshops to identify “Barriers to Performance”, running sessions for managers and team members. These processes allowed us to identify recurring themes across the institution and to highlight them at both senior management and operational levels as appropriate. The challenge now is how to move this forward and consider how the University might develop upon the findings and make best use of the huge amount of data gathered.

Within my own department (Estates and Campus Services), I have used the skills learned during the project to review and re-engineer the business processes currently in place. I also facilitate the CI group for the department.

As a direct result of the BIP project, and on the back of the learning gained in relation to how continuous improvement has been applied in other sectors, I wished to develop my understanding of how this could be applied in the University and to do that I identified two institutions who are at the forefront of using CI methodologies within higher education.

## Objectives

My primary aim in visiting these institutions was to develop an insight into mature Continuous Improvement Programmes, their development from initial decision to have a CI programme and how their work has shaped the culture within the universities in order to;

- Gain a wider appreciation of the potential application of CI initiatives across different departments both support and academic,
- Inform the development of a formal continuous improvement programme at Abertay University using best practice from field leaders,
- Understand how the implementation of CI in other institutions has evolved to help us manage change and develop CI within the organisational culture,
- Learn how the various tools available to the facilitator can be successfully employed to best effect when talking to colleagues about CI,
- Disseminate the findings across my own institution and across the sector.

## Programme of Visits & Contacts

### *23-24 September – Notre Dame*

Carol Mullaney, Office of Continuous Improvement

Rob Kelly, Assistant Athletic Director, Ticketing & Technology

Melanie DeFord, Director, Grants Business Management, Office of Research

Adam Pierson, Senior Program Director, Office of Continuous Improvement

Angela Knobloch, Program Director, Office of Continuous Improvement

Bryan Tornifolio, Rotation Program

Shannon Cullinan, Associate Vice President for University Relations

Tammy Freeman, Director of HR Services

Sarah Miesner, Associate Vice President of Campus Services

Tom Guinan, Associate Vice President Internationalisation

Mick Chapple, Senior Director, Enterprise Support Services, Office of Information Technologies

Todd Hill, Senior Director, Academic & Administrative Services, Office of Information Technologies

### *26-27 September – Penn State*

Barbara Sherlock, Senior Planning & Improvement Associate

Alexander Yin, Senior Planning & Research Associate

Pam Fuller, Director, IT Planning & Resources

Gail Hurley, Associate Vice President for Auxiliary & Business Services

Paul Ruskin, Communications/Public Affairs Co-ordinator Office of Physical Plant

Alex G. Novak, Manager, Marketing & Communications Office of Physical Plant

Nancy Lambert, University Health Services Assistant Director (Quality/Risk)

Dr Barbara Christ, Interim Dean, College of Agricultural Sciences

Lisa German, Associate Dean for Collections, Information & Access Services, University Libraries

## **Notre Dame University**

Notre Dame is an independent, national Catholic research university located adjacent to the city of South Bend, Indiana, in a metropolitan area of more than 300,000 residents approximately 90 miles east of Chicago. Founded in 1842 by French priest Edward Sorin and his colleagues it retains its Catholic identity, morality and service ethos into the 21<sup>st</sup> century.

The University is organised into four undergraduate colleges — Arts and Letters, Science, Engineering, and the Mendoza College of Business — the School of Architecture, the Law School, the Graduate School, 14 major research institutes, two dozen centres and special programs, and the University Library system. Enrolment for the 2012-13 academic year was 12,126 students overall including 8,475 undergraduates.

The Continuous Improvement office was launched in January 2010 to help the University meet its strategic goals through the use of proven methods and tools. In particular, the office offers Continuous Improvement training opportunities for University employees to prepare them to lead or participate in further CI projects. The team also provide project support and guidance for project sponsors, leaders, and teams throughout the duration of their CI projects.

## **The Pennsylvania State University**

The Pennsylvania State University (commonly referred to as Penn State or PSU) is a public, state-related research university with campuses and facilities in Pennsylvania. Founded in 1855, the University has a stated threefold mission of teaching, research, and public service. Its instructional mission includes undergraduate, graduate, professional and continuing education offered through resident instruction and online delivery. Its University Park campus, lies within the Borough of State College and College Township and houses the teaching facilities for 45,000 students. Penn State has another 19 commonwealth campuses and 5 special-mission campuses located across the state providing education to an additional 35,000 students. Penn State has been labelled one of the "Public Ivies," a publicly funded university considered as providing a quality of education comparable to those of the Ivy League.

Penn State has a long established department, The Office of Planning and Institutional Assessment, which supports improvement, planning and assessment initiatives at the unit and institutional level and promotes the effective and efficient use of resources to maintain and improve institutional quality. They help units and teams assess their needs, develop strategic plans, improve key processes, and develop collaborative team environments. They also provide information and data to support University-wide decision-making and work to strengthen the capacity for leadership and innovation.

During the BIP project I found that the 'Innovation Insights' publications from Penn State were invaluable in helping to develop our methodology and to avoid some of the pitfalls of facilitating groups of colleagues. My subsequent contact with their Senior Planning and Improvement Associate, Barbara Sherlock, was extremely encouraging and I hope that having developed the links between our institutions will be beneficial in the future. Ms Sherlock recommended that I should get in touch with Ms Mullaney at Notre Dame as a comparison institution due to their contrasting methods and the relatively new nature of their program.

## Office of Continuous Improvement, University of Notre Dame

The office's mission;

"Partner with units to help them achieve University goals through the use of continuous improvement methods / tools."

They aim to;

"Foster a culture that embraces continuous improvement and positive change to support Notre Dame's unique mission... and to continue to build on 169 years of excellence."

When the original team – Team Apex – was put together in 2010 it comprised of colleagues with some experience of 'Lean'<sup>1</sup> or 'Six Sigma'<sup>2</sup> and some whose approach to work indicated that they would be suited as 'early adopters'. The team came from various areas of the University, a diverse group with wide ranging experience and skills, who worked on Apex in addition to their substantive posts. Advised and trained by consultants Rath & Strong, the team worked to devise ND's<sup>3</sup> own approach to Lean Six Sigma, recognising that their institution's traditional background and reluctance to embrace anything viewed as "too corporate" might result in the concept being rejected by the wider community. By focusing primarily on how to improve the service to students, staff, parents and alumni – not on cost savings – and how to better use the resources available, the Notre Dame approach has concentrated on seeking out wasteful processes, along with time consuming and outdated practices.

Once the method had been established, Team Apex were then tasked with bringing ideas from their own area that they felt could be quick wins; visible, effective improvements that would encourage others to get involved with CI. Once progress had been made with these projects the University's senior management endorsed staff achievements, acknowledging their contribution and highlighting the developments in a number of areas;

- number of hours saved
- amount of rework reduced
- percentage of satisfaction improvement
- financial savings

Many of the Notre Dame staff I met felt that the decision to use this pull approach, rather than imposing CI across the institution, has been key to its success. Taking the time to build strong foundations and to demonstrate the potential benefits has meant that the services of the OCI<sup>4</sup> are now sought out by an ever widening range of services. Continuous Improvement at Notre Dame has a particular champion in John Affleck-Graves the University's Executive Vice President who has supported the development of the department from its inception, encouraging involvement at all levels.

OCI are making a significant impact by providing training to colleagues from all areas of the University. There are two main levels of training; an initial one day course in order to provide

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<sup>1</sup> Lean - Simply, lean means creating more value for customers with fewer resources.

<sup>2</sup> Six Sigma is a set of techniques and tools for process improvement developed by [Motorola](#) in 1986

<sup>3</sup> Notre Dame

<sup>4</sup> Office of Continuous Improvement

conceptual context and a longer advanced course which is aimed at staff who will head up improvement teams within their own departments.

- Basic Training delivered to 800 colleagues (Yellow Belt)
- Advanced Training delivered to 100 colleagues (Green Belt)
- Expert Training program has recently begun (Black Belt)

As a result there are now initiatives, which are not overseen by the OCI, happening as a matter of course within departments who have completed their training and been supported through initial projects.



## **Office of Planning and Institutional Assessment, The Pennsylvania State University**

The Office's goals are:

- 1 – To provide comprehensive consulting services in the areas of assessment, planning and innovation to build a culture for efficiency and effectiveness.
- 2 – Train, educate and provide for the diffusion of innovative ideas and models in the areas of assessment, planning and innovation.
- 3 – Facilitate University decision-making processes through information and analysis

In its first incarnation in 1983, the Office of Planning and Analysis was established to support planning across the institution and in 1992 it was joined by the Continuous Quality Improvement Centre which focussed on process improvement. During this period there was an extensive training programme rolled out across the University in relation to improvement initiatives. Merging in 1996 the two teams became the Centre for Quality and Planning with an expanded role to include benchmarking and developing performance indicators. In 2003 the Centre became the OPIA<sup>5</sup> and continues to this day, to promote the efficient use of resources to maintain and improve institutional quality.

During 2010 and 2011, the Academic Program and Administrative Services Review Core Council evaluated all academic programs and many major administrative processes at the University. Many of the recommendations to Schools and Services meant that difficult decisions had to be made, such as full scale review of service provision along with academic programs and significant cuts in some areas, followed. OPIA have been present to provide invaluable guidance and support, data analysis, facilitation and training to the affected teams.

Providing the link between continuous improvement and strategic planning, the OPIA highlight how the two are complementary. As Barbara Sherlock writes in her book, 'strategic planning provides the framework for defining an institution's mission, vision and goals, continuous improvement provides principles and tools for guiding the planning and improvement processes'.

Penn State's approach to individual process improvement has evolved over many years, but similarly to ND, they also took a structured approach. Since 1994 they have used the IMPROVE model, (an expansion of the Plan-Do-Check-Act model introduced by Walter Shewhart and popularised by W. Edwards Deming). By providing a structured method for groups to use to tackle problem solving, process redesign and decision making, the IMPROVE model has made it easier to work together to share ideas through the common framework.

OPIA also operate under a pull system, the department is well known throughout the University and their reputation is such that their services are sought out by many, with no need to coerce those who have thus far chosen not to engage. The methods are being used across the institution by a wide variety of departments; including healthcare providers in order to keep their national accreditations and custodians improving the clean-up operation process on match days.

The publication of 'Innovations Insights' papers, short videos and publishing of the Quality Team highlights online, means that there is a wealth of information, just a simple click away. Their material is not only available to colleagues within their institution but is accessible to all. For those of us with an interest in understanding the practical application of CI in higher education it's a goldmine.

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<sup>5</sup> Office of Planning and Institutional Assessment

## Potential Application

At both Notre Dame and Penn State there have been many successes across a range of departments, some of their success are listed below;

### Notre Dame

- Catering & Event Management Processes - ~1,720 hours per year redirected from administrative tasks to value added activities; ~\$40k annually in food waste savings; improvements in customer service.
- General Services Workload Management: Rework reduced from 31% to ~2%
- H1-B Visa Process: reduced overall processing time for requests
- Law School - Admissions Decision Cycle Time: Reduced average time for admissions decisions from 45 days to 16 days.

### Penn State

- International Decisions processed 100% online ~\$20K saving
- Research Application Process; eliminated 10 surplus steps in the process and decreased time from application to approval by 35%.
- Streamline employment process in Office of Physical Plant – reduced time from submission of request to approval by 8-10 days and improved awareness of deadlines for advertisements.
- Evaluation of Exam Room Cleaning – improved cleaning performance by 45%

Both these institutions were already well run, professional organisations prior to their CI initiatives, these examples demonstrate the potential for applying CI is enormous; universities are complex organisations where hundreds of processes are carried out every day. Starting with key areas, establishing where the real issues lie and producing demonstrable improvements has encouraged involvement from other departments in both universities. Success in CI initiatives creates an internal momentum and appetite for change.

## Developing a culture of Continuous Improvement

Before considering whether to launch CI it is clear that there is no 'one-size fits all' solution, as I have seen that both institutions I visited have taken key elements of a common methodology in order to create bespoke solutions that best suit their needs.

'Lean' and 'Six Sigma' provide a structured approach to help manage and improve quality and performance and have a variety of tools built into them to solve complex problems. They were designed to improve practices within manufacturing to allow incremental adjustments to manufacturing processes in order to increase quality and output levels. As such they can be a hard sell in an educational environment, where staff may raise concerns about stifling creativity and cultural fit within the institution.

By adopting language to familiar in academia and also by using examples that relate to university transactions, Notre Dame has adapted Lean Six Sigma to fit their organisation. Penn State has chosen a completely different language and designed their own model, but many of the key elements are similar – see below.

University of Notre Dame	The Pennsylvania State University
<p><b>DMAIC</b></p> <p><b>D</b> Define the project's purpose and scope  <b>M</b> Measure - gather all relevant information  <b>A</b> Analyse the data to identify root causes of issues  <b>I</b> Improve by implementing the solutions  <b>C</b> Control the process by standardising it</p>	<p><b>IMPROVE</b></p> <p><b>I</b> Identify and Select Process for Improvement  <b>M</b> Map the Critical Process  <b>P</b> Prepare Analysis of Process Performance  <b>R</b> Research and Develop Possible Solutions  <b>O</b> Organise and Implement Improvements  <b>V</b> Verify and Document Results  <b>E</b> Evaluate and Plan for Continuous Improvement</p>

Attempts to introduce CI as an 'initiative' or 'project' go entirely against the idea of continuous improvement; correctly implemented it should become a natural part of cyclical planning processes. However there must be a starting point, which itself might be a training programme or series of key projects; at the end of this phase the organisation will have a core number of their staff who understand and can actively participate in continuous improvement activities within their own departments and cross-department teams.

**Issues which were highlighted to me in both Notre Dame and Penn State include;**

Training

Ensuring that there is a wide understanding of value and potential of the continuous improvement model which is to be adopted is hugely important. At both institutions significant training programmes have taken place.

Sponsors

The Sponsor of a CI initiative should be in a position of authority and influence, which allows him/her to authorise the implementation of the outcome of the project – a head of department, the budget holder or team leader or similar.

They should have the ability to;

- provide resources - money, people, time and help;
- ensure that the team understands the remit – as described in the charter;
- know how to stay informed, without interference;
- help the team to address issues out with their control;
- be fully responsible for the success of the team and the full implementation of their results.

Charters

The charter is a document drawn up by either the sponsor, or the sponsor in conjunction with the team and team manager. Similarly to a Project Product Description in Prince 2 the charter is part of the initial scoping activity, it is not prescriptive in relation to the outcome, but sets out expectations, available resources, timescale and planned communication points. Roles and responsibilities are determined at the earliest opportunity to allow the team to commence. Setting this out at the

beginning of the project ensures that the team and the sponsor have a shared understanding before work begins as to the direction which should then be followed.

### Data

Although initially identifying areas for improvement may be based on a feeling that something is not working as it should, it is the data that will confirm whether or not attention should be focused on a particular process. One of the cornerstones of CI is that decisions and improvements are made by analysing the data. The problem in many cases where there is no data available, we may feel that a process takes too long, but how long does it actually take? Until measurements are taken and the facts can be ascertained, the scope of problem cannot be determined. Until the process is mapped out in its current state, with all its interdependencies also included, it is particularly difficult to see where the problem lies and to understand where unintended consequences may be caused by altering the process chain.

By taking time in the initial stages to benchmark the current position, key decisions in relation to the scope of a project and the size and composition of a team can be simplified.

### Teams

One of the cornerstones of continuous improvement is that the input of the people involved in carrying out the process is vital. The composition of any team appointed to review and improve a process should ensure that there are members who are familiar with each stage. Encouraging interaction with colleagues up and downstream from a particular point in the process aides understanding of the process, its purpose and ultimately how it works (or doesn't work) overall. There are additional benefits in getting to know colleagues outside the normal sphere of working and appreciating their difficulties, whilst fostering a culture of co-operation, communication and skill sharing.

### Recognition

It's not very Scottish, all this blowing your own trumpet, and we're not very good at it, we get red faced and shuffle in our seats. But at both of the universities that I visited, completed CI initiatives are promoted as examples of good practice, the individuals who participated are recognised and thanked for their hard work. In previous years Penn State have run a showcase of completed work, highlighting successes and providing a platform for knowledge transfer and to acknowledge the efforts of their respective teams. They publish papers online and the teams' progress is held publicly on the OPIA site. Notre Dame mark the completion of their training programmes with a presentation to staff in a gathering of their peers and promote their successes through published documents, an online presence and promotional videos.

### **Facilitator Tools**

Barbara Sherlock shared with me her most regularly used and reliable techniques for facilitation and some of the books from which she has gleaned them. Please find the reading list below.

Bens, Ingrid. (1999). *Facilitation at a Glance*, Cincinnati, OH: AQP and Participative Dynamics

Block, Peter. (1981). *Flawless Consulting*. USA: Jossey-Bass Pfeiffer

Brassard, M. (1996). *The Memory Jogger Plus+*. Salem: Goal-QPC

Cohen, D. S. (2005) *The Heart of Change Fieldguide*. USA: Harvard Business School Publishing

de Bono, E. (1999). *Six Thinking Hats(revised)*. USA: Penguin

Doyle, M & Straus, D. (1993). *How To Make Meetings Work*. New York: Berkley  
Fisher & Ury. (1999). *Getting to Yes*. London: Random  
Kinlaw, D.C. (1993). *Team-Managed Facilitation*. San Diego CA: Pfeiffer & Company  
Kotter, J. & Cohen, D.S. (2002). *The Heart of Change*, USA: Harvard Business School Publishing  
Scholtes, Joiner & Striebel, (2003) *The Team Handbook*. Madison, WI: Joiner Associates Inc  
Schwartz, R, (2002) *The Skilled Facilitator*, USA: Jossey-Bass Pfeiffer  
Townsend & Donovan. (1999). *The Facilitator's Pocketbook*. Sterling, VA: Stylus Publishing, LLC.  
Wilkinson, M. (2004) *The Secrets of Facilitation*. San Francisco: Jossey-Bass Pfeiffer

Not to forget...

Sherlock, B [ed.](2009) *Integrating Planning Assessment & Improvement in Higher Education*,  
Washington, NACUBO

Barbara also recommended getting in touch with the International Association of Facilitators, which does have a Scottish group.

Ultimately understanding the group and the issues they are working on\*, tailoring the approach to suit and having an extensive toolkit from which to call upon are key skills for the facilitator, so I shall continue experimenting on my poor colleagues and trying to find some favourites of my own.

\*This lead Barbara to be required to learn about Manure Management for an Agricultural Sciences project!

## **Conclusion**

Having visited two institutions with mature CI programmes and seen first-hand the positive impact and benefits to each institution it seems clear to me that there is a place for CI in universities. Ultimately CI is an iterative process and, since we work in a constantly changing sector, there will always need to be adaptation and adjustment to the way we conduct our business. A properly embedded culture of continuous improvement can ensure that institutions are able to respond to the needs of our customers and manage our increasingly scarce resources to their maximum benefit.

CI is not therefore a short term initiative based approach; if there are processes they can be measured for effectiveness and improved upon. CI does not prevent innovation and creative thinking, in fact it does the opposite by encouraging people to look for new ways to solve problems or improve even the most mundane tasks. By empowering staff to rethink their processes and supporting their proposals, managers will foster a culture where continuous improvement isn't something that is done *to* them, but that they *chose* to do every day.

The complexities of introducing Continuous Improvement into the university environment have been tackled in various ways with varying degrees of success. From my experiences during my visit to two of the most successful, I can see that it requires a light but firm touch; long term commitment at the highest level to developing staff, supporting early projects and recognising successes in order to foster an environment where innovation and co-operation across the organisation becomes the norm.