



BOSTON SCIENTIFIC GALWAY WINS CPD COMPANY OF THE YEAR AWARDS 2007

For the second time in three years, the Galway-based medical devices company Boston Scientific has won the CPD Company of the Year award in the Engineers Ireland Continuing Professional Development (CPD) competition.

This article for the Journal provides an overview of how the company achieved clear-cut business benefits arising directly from their CPD practices and in the process became this year's overall winner.

For more than 25 years, Boston Scientific Corporation (BSC) has advanced the practice of less-invasive medicine by providing a broad and deep portfolio of innovative products, technologies and services across a wide range of medical specialties.

These less-invasive medical technologies provide alternatives to major surgery and other medical procedures that are typically traumatic to the body. In less-invasive procedures, devices are usually inserted into the body through natural openings or small incisions and can be guided to most areas of the anatomy to diagnose and treat a wide range of medical problems. Boston Scientific have five facilities in Ireland – Galway, Cork, Tullamore, Letterkenny and Clonmel.

Boston Scientific Galway

Spearheading Boston Scientific's Irish operations is their facility in Galway, their first international manufacturing facility which was established in 1994.

The facility now comprises a modern purpose built 400,000 sq ft campus housing both manufacturing and research and development. A significant proportion of the Galway employees are engaged in R&D and New Product Introduction. Boston Scientific Galway is the largest multinational company in the west of Ireland and one of the largest healthcare companies in Ireland.

Galway is also the largest manufacturing facility in the Corporation making products for several different divisions. The Galway facility is involved in cardiovascular, peripheral vascular and endosurgery products and produces the Taxus

range of drug eluting stents. The company promotes business excellence through leading edge recruitment training and development and the deployment of best in class operational methodologies such as Lean Manufacturing, Six Sigma and Project Management.

Vertical Integrated Manufacture (VIM)

To meet its customer needs and control its own intellectual property, Boston Scientific adopted primarily a Vertical Integrated Manufacturing strategy.

The Galway facility conducts its own research & development, process development, component manufacture, final product assembly, test and packaging for an extensive product portfolio. It also builds and manages its own equipment and automation development through an on-site Equipment Engineering group. In guiding this capability Boston Scientific, Galway recognised early the need to continually develop a professional resource base.

Many disciplines are incorporated into this technical resource base, from Mechanical, Manufacturing, Industrial, Materials, and Chemical Engineering to Analytical Chemistry and Microbiology which are aligned to the company Quality Policy.

Continuing Professional Development (CPD)

CPD activity at Boston Scientific Galway was used to strengthen and build a robust technical group within Manufacturing Engineering to support Manufacturing Operations. "CPD is an essential foundation for an



organisation with a goal for executing tasks flawlessly” states Larry Keane, Engineering Manager.

The project, Technical Staff Development Program at Boston Scientific, Galway was vital to help support technical staff development and provided a structured system for people managers. This involved implementation of a Technical Development Program for all technical staff across the Manufacturing Engineering department.

The programme concentrated on core competencies and specific requirements for each business (Valuestream) unit within Boston Scientific Galway.

The programme increased overall technical competency levels. It also facilitated the integration of the technical group into the larger Operations support teams thus enabling the group to become more self sufficient and efficient.

The CPD activity in the programme resulted in the establishment of:

- Specific training curriculum for each technical job code within the site. This ensures that training required for all technical staff is visible and consistent.
- Electronic tracking for all technical staff to record training and class enrolments. Training compliance is tracked and measured across BSC.
- Standardisation of communication practices across Manufacturing Engineering. This included the use of common templates, regular meetings and more structured shift handovers.
- Improved problem solving and process improvement through Six Sigma methodology.
- The identification of technical staff training needs has helped people managers prioritise where to target training.

The 5C people management model was developed by the team as the project was scoped out. The 5C's that the model considered are '**Compliance, Connect, Consider, Control and Communicate**'. This model provided an innovative approach to link individuals to the five sectors of 5C. This approach was developed and adopted as a pivotal part of



Pictured at the presentation were (from left) Larry Keane, Engineering Manager, Boston Scientific Galway; John Power, Engineers Ireland; Minister of State for Labour Affairs Billy Kelleher; Ronan Diviney, Senior Manufacturing Engineer and Declan Slemmon, Facility Engineering Director, Boston Scientific Galway.

Why Boston Scientific Galway won

“Working in a highly competitive and technologically advanced sector, it was recognised that there had to be further enhancements of this organisation’s already high productivity and quality standards. Using a creative and comprehensive CPD programme along with advanced metrics, significant success has already been achieved.” Engineers Ireland citation, CPD Company of the Year Awards, 2007

CPD practices within BSC Galway. This provides a people management model for all technical/engineering functions across the business. The circle represents a ‘Closed-Loop System’. This sets a vision for target activity to become self-sustaining and/or self-managing. The 5C model can be explained as follows:

- **Compliance:** This area focused on continued customer protection. This was a key component of 5C. Calibration guidelines for equipment were defined. Preventative maintenance guidelines were established with criteria set for the completion of preventative maintenance routines as per assigned schedule.
- **Connect:** Updates to New Employee Orientation provided tailored communication to technical staff. Issue/action items tracking provided a system to capture individual project activity.
- **Consider:** Training levels across the process were evaluated through a process assessment. This identified training opportunity within the process. Open discussion at the Monthly Technical Forum generated productive conversations with regards to issues and continuous improvement within the business and across Valuestreams.
- **Communicate:** Regular business communication to technical staff provided another key component of 5C. This linked operations performance metrics to individuals with direct influence on such metrics.
- **Control:** Control of training through ‘Learning Management System’ (LMS) eliminated hard copy training records where applicable. This provided an automated solution in electronic sign-off. LMS is part of the BSC quality system. It is tracked across each Valuestream as a business metric.

"This is a tremendous achievement for the Galway site and we are absolutely delighted with the award, this is a truly deserved recognition for the team on their huge efforts".
 Paraic Curtis, Managing Director and Vice President of Operations

"Boston Scientific's 2005 CPD submission described the project to establish the infrastructure of knowledge and technology for the development and manufacture of Drug Eluting Stent products. This 2007 CPD submission describes the systems that have since been implemented to sustain this organisation through continuing development".
 Declan Slemon, Facilities Engineering Director

The success of CPD activity is demonstrated by the following examples of activities within the 5C CPD Model.

1. Compliance Guidelines (Compliance)

Continued customer protection was achieved by updating BSC Galway 'Policy for Preventative Maintenance'. This defined a section within 'Ancillary Duties' outlining the importance of pre-calibration and post-calibration of equipment. It also included a section on how to deal with catastrophic failure of equipment.

2. Performance Appraisal (Connect)

Performance Achievement Development Review (PADR) is the process BSC utilises in the management of performance



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Business Systems

The following tools are utilised by Boston Scientific to manage its business. These tools are core to CPD opportunities for individuals.

- Six Sigma is a customer-centered, systematic approach to process improvement. It is the relentless pursuit of variation reduction and defect elimination. It provides a standardised approach in measuring and comparing process performances. It is the application of statistical tools and techniques to analyse and improve processes.
- Lean Manufacturing is the relentless eradication of waste.
- Project Management provides a structured system in the management of projects at Boston Scientific. From project charter, risk assessment, scheduling, issue / action items tracking through to implementation and close-out provides a strong platform for programme execution.

and development objective. Mentorship on the process played a key role in helping technical staff link to the PADR process.

3. Process Assessment (Consider)

A key area of the programme considered the training status of the technician population against specific process and technologies within each Valuestream. This provided people managers with a competency rating versus each process. This enabled prioritisation of training against areas of opportunity. Training modules were developed and external vendors were utilised to provide training on specific areas as per the assessment.

4. Learning Management System (Control)

LMS is a system that enables Boston Scientific to manage, deliver, and monitor all training activities. The functionality of LearningConnect allows both learners and training administrators to access all aspects of training and training administration through a single portal (site).

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Other CPD Activity

Promotion & Career Progression at Boston Scientific Galway

Boston Scientific Galway understands the importance of rewarding and recognising its top performers and achievers. The organisation supports employees in their development through both formal & informal channels.

Continuing Education

Boston Scientific Galway recognises the importance of supporting its employees in furthering their education. This creates a vision to create future leaders. This vision is being realised with many Galway developed employees who have grown to management positions, some of whom have moved to leadership roles at other sites in the Boston Scientific network. We currently have 6% of our technical workforce in Galway participating in continuing education. The courses they are taking range from various masters' courses to diploma courses. These courses are sponsored by BSC through our further education program.

Engineering Society

In May 2007 Boston Scientific Galway launched an Engineering Society led by a team of young engineers. The Engineering Society is a big leap and the first of its kind in Boston Scientific so everyone's input is required to make this a big success. The society is an interactive forum which allows engineers across the plant to meet, voice ideas and opinions and share their experiences. Some of the many key benefits to participants of this society are:

1. Leveraging of experiences and skills.
2. Improved interaction between engineers.
3. Talent recognition.
4. Technology awareness across Value Streams.
5. Peer to peer recognition.
6. Furthering education and competencies.

The Society offers guest talks from engineers from various walks of life. In addition, the society creates

opportunities to learn more about the sites various departments, technologies and products, including line tours and technical presentations. The society also assists in providing career development advice, not forgetting a range of social and sporting events!

Graduate Development Program

In 2005 BSC, Galway designed & developed a Graduate Development program which was launched in July 2006. As an employer BSC, Galway recognises that to get the best, we have to give the best, hence the Graduate Development Programme is committed to giving each graduate a variety of experience within our organisation, structured on-the-job training and a comprehensive range of technical and personal development courses.

The Graduate Development Programme provides a comprehensive 24-month development Programme with each graduate spending a specified period in three of the following areas:

1. Manufacturing Engineering.
2. Process Development Engineering.
3. Research & Development.
4. Operations Support.
5. Equipment Engineering.
6. Quality.

The programme provides a three-phased, 24-month structured learning Programme to graduates and thereby assisting graduates to develop their careers in line with individual and organisational needs. For the duration of the Programme, each graduate has a mentor assigned from senior members of staff to provide coaching, guidance and support.

Corporate Technical Excellence Awards

Technical awards recognise innovation and significant technical projects. Over 50% of 2007 "Technical Excellence Awards" were awarded to Galway employees for a broad range of significant technical achievements.

A user can access the system through a single application and password to accomplish a range of training-related tasks. This system is used to create both generic curricula that are job code related and task/role curricula that are area-specific and assigned by individual managers in each related area. This allows BSC, Galway to carefully tailor individual training needs.

5. Monthly Meeting (Communicate)

A very important component of the programme centred on face to face communications. Open discussion at the monthly technical forum generated useful conversations with regards to issues and continuous improvement within the business. It also provided greater connection with staff that work night shifts.

Project benefits

Continued customer protection is vital for the future of Boston Scientific. The programme has contributed significantly to this area. Process yields have increased through increased focus, collaboration on issues and development of training modules to support areas of training opportunity within the process. This has resulted in a significant six figure cost improvement to the organisation through reduced process variation. Regular technical staff meetings encourage open discussion on technical issues and process improvements. These meetings offers a forum to provide technical staff with an update on business performance. This increased supervisor and report interaction makes it a key CPD activity.



The Liberté Coronary Stent System from Boston Scientific introduces a new generation of lesion access and conformability.

Project Team

- Ronan Diviney**, Senior Manufacturing Engineer
- Sean Griffin**, Senior Manufacturing Engineer
- Karen Brennan**, Senior Learning & Development Specialist

Project Sponsors

- Declan Slemon**, Facilities Engineering Director
- Larry Keane**, Engineering Manager

Technical training is controlled electronically through a 'Learning Management System'. This has provided a structured platform for control of training. Generation of curricula that are area-specific has provided a world class system for training management. A structured system in people management has been achieved through 5C. This has been achieved by standardising various process and people management templates across each business. This helped promote the benefits of the CPD program for People Managers. The 5C model has provided a structured and innovative CPD system for the management of technical staff learning and development. It has standardised practices in each Valuestream promoting an environment of learning and information sharing. It has set a vision for the control of training and development of training material for the future within BSC, Galway. The project has measured up to and exceeded expectations. The people management model developed has potential to influence other departments within BSC Galway. Areas of opportunity are being explored across the site. The programme has delivered a 'feel good' factor. This is very difficult to quantify and its importance can not be underestimated. This CPD activity plays a huge role in providing a structured system for the working lives of individuals at Boston Scientific now and for the future.

"I never teach my pupils; I only attempt to provide the conditions in which they can learn". Albert Einstein. Φ



Winners in the Large Sized Company Category, Project Management Group. Pictured (l - r) are: Engineers Ireland President John Power; Minister Billy Kelleher; Dave Murphy, Director, Project Management Group & Caríosa Kelly, Engineers Ireland CPD Accreditation Manager.

PATHFINDERS IN CPD ACHIEVEMENT; This year's category winners

The three category winners in the CPD Company of the Year Awards 2007 were: Small Sized Company – Biomedical Engineering Dept, Cork University Hospital; Medium Sized Company – TOBIN Consulting Engineers; and Large Sized Company – Project Management Group (PM).

PM Group was awarded the CPD Company of the Year Award 2007 in the Large Sized Company category in recognition of its graduate training programme which aims to help engineering graduates achieve their full potential. In 1998 the company set about creating a formal graduate training scheme. The programme provides for the graduate's competency-based training and development through a combination of on-the-job training, internal and external training courses, presentations, and site-based work. It forms the basis of the graduate's formal training to support his/her transition to a fully experienced professional, and ultimately, election to Chartered Membership of a relevant professional Institution.

The company also benefits by recruiting the best graduates and developing them into highly experienced professionals who can deliver a top class service. In order to ensure its effectiveness over time, the programme is reviewed frequently and new modules are regularly introduced. Dave Murphy, PM Group Deputy CEO, at the presentation of the award commented: "PM Group recognises the

importance and value of learning. We believe that implementing initiatives like the Graduate Development Programme can help foster and encourage our employees' ability to play a part in the company's success. We are delighted to have our efforts recognised through this Engineers Ireland award".

TOBIN's culture change

TOBIN Consulting Engineers won CPD Company of the year 2007 in the Medium-sized organisation category. The submission described the decision of the TOBIN board in 2006 to address a number of key areas which were identified as being critical for continued success and growth. Major training programmes, under the auspices of a dedicated director to manage the new Conditions of Contract and Conditions of Engagement as well as another dedicated director to implement Health & Safety and Risk management systems, were rolled out. They have brought about a culture change and opened up very significant new business lines for TOBIN. Their current business strategy



Winners in the Small Sized Company Category, the Biomedical Engineering Department, Cork University Hospital (CUH). Pictured (l - r): Bernard Murphy, Principal Biomedical Engineer, CUH; Ger Flynn, Head of Biomedical Engineering Department (CUH); Minister Kelleher; and Tony McNamara, General Manager, CUH Group.



Winners in the Medium Sized Company Category, TOBIN Consulting Engineers. Pictured left to right: Minister Billy Kelleher; Maura Walsh, Quality Manager and Robert Tobin, Director, both of TOBIN Consulting Engineers; and Professor Jim Browne, Vice-President Engineers Ireland.

could not be delivered without such a focused approach to CPD, the company states. CPD is not taken on by TOBIN for the sake of CPD - it is strategically directed and this direction is driven by management to ensure that the company and the staff get real value. Commenting on the award, Eamonn Waldron, Managing Director, TOBIN said: "In 2006, TOBIN identified a number of critical areas for continued success and growth. A major training programme was implemented across all staff and areas such as contracts, health and safety and risk management systems were developed. This brought about a positive culture change and opened up significant new business opportunities. It is very gratifying that our efforts have been acknowledged by Engineers Ireland in this manner."

CUH's Operation Bambino

The Biomedical Engineering Department, Cork University Hospital (CUH) has been awarded the CPD Company of the Year in the Small Sized Company category in recognition of the innovative Continuing Professional Development (CPD) practices they employed in researching and identifying new and emerging medical device technologies and then engaging in frontline technical and soft skills CPD and cross-training ahead of *Operation Bambino*. *Operation Bambino* was the name given to the project which entailed the seamless merging of the three local maternity units, (the Erinville Maternity Hospital, St. Finbarr's Maternity Unit and the Bon Secours Maternity Unit) in one day into the new €75 million purpose-built state-of-the-art Cork University

Maternity Hospital (CUMH) which opened in March 2007. The complexity and scale of this operation is unprecedented in the history of the Irish health services. Tony McNamara, General Manager, Cork University Hospital Group, said: "This award is a major coup for the staff and reflects the level of expertise and experience within the Biomedical Engineering Department as well as their commitment to maintaining and developing this expertise. Biomedical Engineering provides a critical service in CUH and other hospitals in the region. We are delighted that their innovation and expertise has been formally recognised by their peers in industry". Φ

CPD Merit Award Winners 2007

ABB Ltd (Dundalk)
Commission for Communications Regulation (ComReg)
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Duffy Chartered Engineers
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