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IT Service Management Practices in Education; a new breed of IT Professional Concept Paper

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IT SERVICE MANAGEMENT PRACTICES IN EDUCATION; A NEW BREED OF IT PROFESSIONAL CONCEPT PAPER

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Abstract

Statistics show that there is a need to create management professionals in the IT industry who have the ability to manage a portfolio of IT Services across the lifecycle. By including IT Service Management Practices at undergraduate and postgraduate level, it will increase the knowledge of those entering the industry and aspiring to management positions. Existing training is delivered by trainer-led courses implemented world-wide under license by the APM Group, usually to those already working in IT. Trainer-led courses, whilst built on competencies described by the British Computer Society; Skills for the Information Age (SFIA) and Blooms Taxonomy do not allow candidates to explore the material in full in different environments. The courses go a long way to help IT managers design services which are fit for purpose and fit for use. This paper is written to open up a discussion on how we can include IT Service Management Practices in education, whilst considering the development of capabilities of the IT Professional who can work in a global environment. This builds on existing offerings via e-skills UK[1] IT Management for Business (ITMB) Programme which is currently running in several U.K. universities.

Keywords: IT Service Management, Globalisation, Competencies, Capabilities, SFIA, Bloom

1.0 Introduction

The pervasive nature of technology is increasing the pressure on staff working in the IT industry to be more management-focussed. Statistics released by e-skills UK[1] demonstrates that the IT industry requires 141,000 more personnel each year by 2012. Increasingly there is a requirement for senior/professional management roles and more women in technology related disciplines.

Universities have been pivotal in creating high quality IT Graduates at undergraduate and postgraduate levels for over 40 years. The Quality Assurance Agency publishes the curriculum framework in order to provide advice to HEs in their designs for IT courses in the UK. The information contains limited guidance on what to include in terms of management content. There is no mention of IT Service Management Practices; which is industry-developed material built on the ISO20000 standard, and branded under ITIL®[2]

Beyond undergraduate level, IT management training has usually been focussed on three main activities.

1. On-going development through job roles as they move up the corporate hierarchical structure;
2. Corporate management training programmes or MBA-type academic programmes;
3. IT Service Management training programmes delivered by private training organisations.

Increasingly, IT Service Management as a practice has gained some momentum in recent years. IT Service Management methods are a practical approach to designing and managing IT services based on the international standard ISO/IEC20000. The standard provides a governance framework for organisations and the framework for management is delivered through the IT Service Management Practices. The IT Service Management framework is adaptable for any organisation and advises IT professionals on how to develop process and functions supported by well defined roles and responsibilities within the IT organisation.

External trainer-led schemes are delivered within short timescales and those taking the "ITIL®2 Expert" course are usually expected to have at least five years of IT management experience as a pre-requisite after first completing the ITIL®2 foundation certificate. Trainer-led courses at all levels are quite challenging. Increasingly as the courses have become lifecycle orientated. The courses are built on The British Computer Society Skills for the Information Age (SFIA) Plus 4 and Blooms Taxonomy.

The mode of delivery is cause for some concern.

1. The training is quite intense and therefore does not allow candidates the opportunity to explore the core material thoroughly;
2. The courses can be perceived as being geared towards getting candidates through the exam process at the expense of a thorough understanding, by them, of the material.

This one-size-fits-all approach is a detriment to the ITIL®[2] material, and could restrict the growth of the material within the IT industry. It may not facilitate the creation of top-quality managers it desperately requires.

This paper will explore the ways in which improvements to IT capabilities and competences can be achieved through education.

In response to the rising trend of consumer-driven IT, it will also suggest ways in which IT professionals can be prepared to work in the global environment supported by a combined effort from the existing educational and training schemes.

2.0 IT Organisational Development

The IT organisation can develop organically based on legacy systems, processes, software and staff competencies. With the rapid evolution of IT and its pervasiveness within business, it is difficult for IT personnel to keep abreast of technical, socio-technical and global requirements for IT. The evolving needs of the business and the increased necessity for business continuity affects all business services. IT is a business enabler and increasingly is considered a strategic partner. Therefore greater pressures are being exerted on IT professionals.

The flexibility of all business services (including IT) is crucial to the on-going success of the business. All components of the IT infrastructure must be developed in-tandem. Turning those resources into capabilities is the underlying philosophy of IT Service Management.

Within the IT industry, there is a growing problem known as the "alignment trap". Research undertaken by MIT Sloan[3] in the United States which was a survey of more than 500 senior business and technology executives worldwide, followed up with in-depth interviews of 30 CIOs, reveals a troubling pattern:

"Those IT systems which are directly embedded into business performance sometimes go astray and IT departments can be stuck in the maintenance zone leaving little time for strategic or pro-active operational/ tactical management. Corporate management

budgets for the amounts necessary to keep the systems running, but IT doesn't offer enough added value to the business and often isn't expected to."

The alignment trap is problematic for business executives and the IT industry. Dealing with it won't be easy. What is required, and examples of this exist, is to embed a culture of systematically managing complexity, effectively sourcing IT and other resources for value and not just for cost-saving. By developing accountability across the service lifecycle it facilitates alignment of the entire IT organisation so that they map into the strategic objectives of the overall business. This can be achieved by using governance to cross organisational lines and silos, and making business objectives responsible for key IT initiatives under a professional IT Service Management framework.

Historically, those managing IT services have usually come up through the technical ranks as they have a sound knowledge of IT concepts. Increasingly the Chief Information Officer or IT senior staff have been undertaking IT Service Management Training. The take-up of training can depend upon a number of factors, and there is no solid evidence to show how and why individuals do so.

What is missing is a constructive national programme which can deliver IT Service Management consistently to a large cohort of learners. The type of programme fits logically with education and can be delivered through business or IT academic departments.

3.0 Challenges for the IT Industry

The IT industry requires approximately 141,000 new people per year[1]. It is also aware that it needs to improve the perception people have about a career in IT, and the Government hopes to put IT in the top 10 of desirable careers within five years.

A-level computing is attracting decreasing numbers of pupils in schools and there has been a 45% reduction of those taking up the subject over the past four years. Only 10% of those taking A-level Computing are girls.

In Higher Education[4] approximately 95,650 enrolled on computer-related degree programmes at undergraduate and postgraduate levels in 2007/08. Only 15% of those enrolled are female. A total of 31,270 graduates obtained a computer-related qualification in 2006/07. It is estimated that post-18 education needs to attract at least another 29,000 graduates per year. It is expected that there will be significant decrease in the number of 18 year olds coming into the education system by 2012. Increasingly, therefore IT needs to attract more mature students, career changers or blend courses together from other disciplines.

There are industry initiatives to improve professionalism for the individual in IT, namely;

1. British Computer Society; ProfIT Alliance, a "whole-of-life" roadmap for professionalism in the industry;

2. e-skills UK; PROCOM which focuses on a blend of capabilities and competencies;

3. APM Group; IT Service Management Qualifications, Project Management and Soft Skills;

4. Institute of Service Management; supporting the individual throughout their career in IT Service Management.

4.0 IT Organisation and Management; Roles to support the business

The industry-led standard for managing IT services is ISO20000. The operating framework is IT Service Management Practices (ITIL®[2]). Continually revised since its inception in the 1980's, ITIL®[2] supports a range of process-led and function-based structures which advise IT professionals on effective management. In the latest revision (known as Version 3), there are 46 roles identified. Within the strategy and design processes, there are many unique roles and responsibilities which are new to the IT industry and directly impact of IT/Business Strategy:

- Business Relationship Manager
- Product Manager
- Service Portfolio Manager
- IT Finance Manager
- Service Designer
- IT Planner
- IT Designer

… and more

There are specific skills associated with these roles which include the ability to be creative in finding solutions to business issues, leveraging technology for business advantage, organising and managing a range of IT services and modelling design solutions to take into the live environment. Leading change and managing across the lifecycle will require the development of increasingly sophisticated personal qualities, inter-disciplinary knowledge and the importance of behaviour and attitude.

5.0 Globalisation

Over the past decade there has been significant movement in the world economy. This has been initiated by geo-political changes, the pervasive nature of technology and the increase in consumer-led demand to use and buy technology-based goods and services. Individuals are now collaborating world-wide and diverse services are blending together for competitive advantage.

High-end technology is increasingly saturating every corner of the business and consumer world. Cheaper and more reliable mass storage and a multitude of inputs and outputs to consumer-driven technology have created many benefits to individuals and companies.

For individuals there is increasing tendency for customer to customer transactions, greater collaboration between like-minded groups and more creative use of consumer devices responsive to personal needs. Increasingly “any-time; any-where” computing is providing greater control for the mass population.

Business can now utilise community developed software, which can help to reduce overheads. The diversity of technology is now acting as the great enabler for business so that it can better consolidate and co-innovate. Communicating business-to-business has never been potentially easier through the integration of platforms and inter-operability of IT systems.

The pervasive nature of technology and the role it plays in people's lives can also be very challenging to them. Increasingly, consumers of IT-based services need key skills to equip them for the digital age:

- The ability to use technology to buy goods/services;
- A better understanding of the benefits of technology and how to exploit it;
- How to sift through the myriad of data stored on-line;
- How to better use social and business networks available through technology;
- Better security awareness for themselves and their families;
- To be smart about the data trail they leave behind.

The UK needs IT professionals who can support the thirst for knowledge and information by individuals. Arming them with the appropriate information they need to survive the growing demands.

6.0 Creating IT Professionals for future economic growth

It is estimated that the effective and efficient use of technology is worth £35bn[1] to the U.K. economy. Figures show there is a short-fall in the number of those who are able to leverage IT for competitive advantage. It is obvious that a different approach is needed to those developing their skills within the IT discipline.

The key capabilities and competencies for IT personnel are very similar to those for professionalising services described above.

Prospective students for IT courses have historically had a core of techno-centric disciplines to choose from. Computer academic programmes have been built around concepts first discussed in the 1980's. Those studying on business/business information systems courses study (amongst other things) business strategy, business ethics, finance and management information. Computer academic programmes develop valuable IT skills but without updating, they are woefully inadequate for the global agenda.

The IT educational system (through educational outlets, schools, FE and HE), has concentrated on producing people who fit into "discipline orientated groupings" within organisational pyramidal structures. With the pervasiveness of technology, the perceived "alignment trap" between business and IT and the evolving global business environment, there will an increasing need for IT personnel to move horizontal, diagonally as well as vertically across the business depending upon the scope of their role within the organisation.

There will always be a need to produce those with excellent abilities to work on specialist IT disciplines. So too, the industry increasingly requires knowledgeable people who can personalise IT services and explain complicated IT concepts to consumers of IT services. Also needed are those who can explain about data and security issues.

What is needed is business and IT staff to discuss issues in a common language. Needed too are those who can sift through the plethora of data, turn that data into information and then make it available as corporate knowledge which is reusable throughout the business. It requires the creation of a metamorphic blend of skills, business/IT problem solvers, communicators and rapport builders. See figure 1.

Essentially these are hybrid skills; business, ethical and corporate mindsets which are melded onto the top of high-quality technical skills. Importantly, IT professionals of the future should be able to adapt across the IT organisational lifecycle to suit prevailing business conditions.

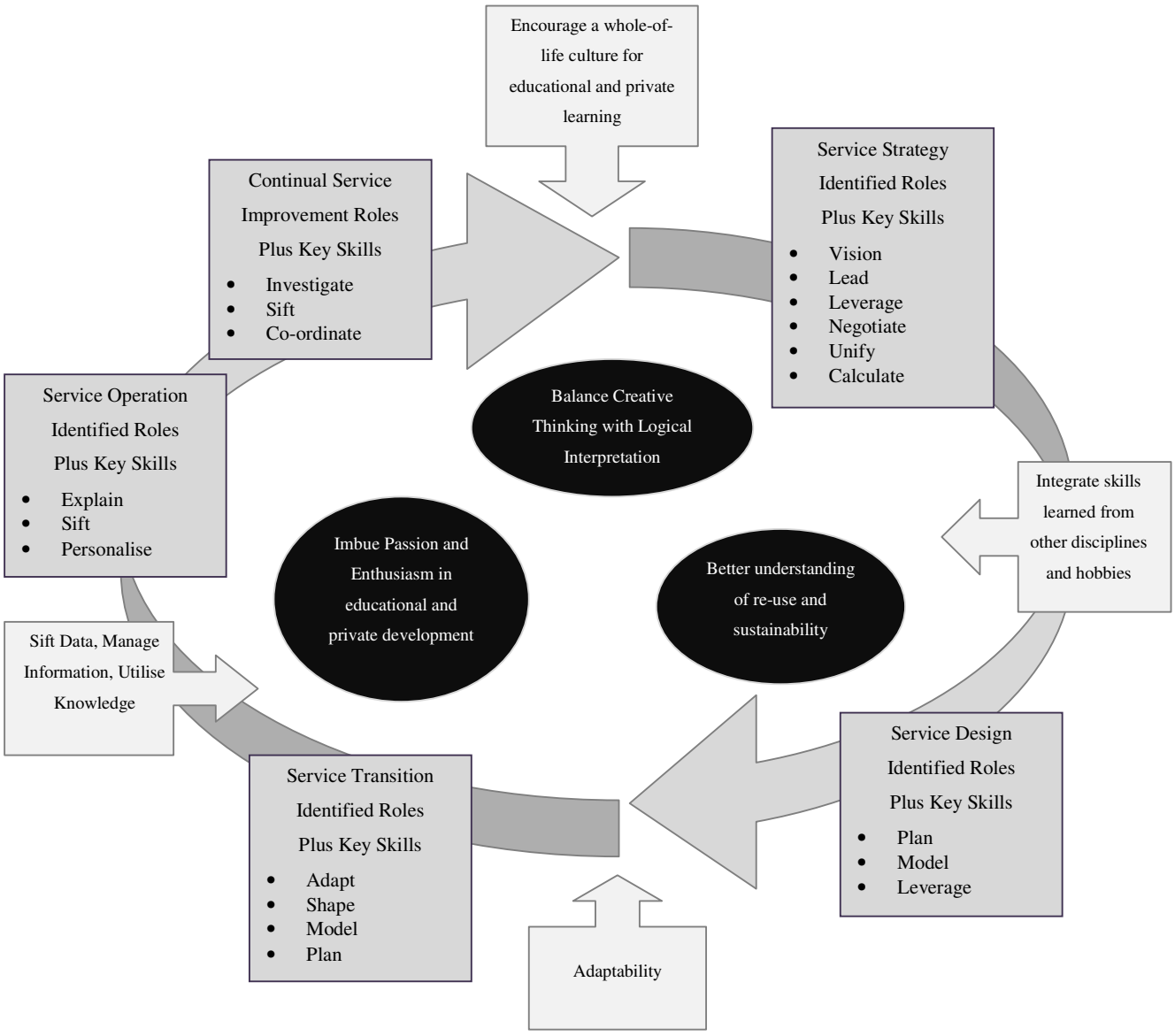

Figure 1. IT Competency and Capability Model, establishes at its core the IT Service Management Practices as five key lifecycle themes. They are Service Strategy, Service Design and Service Transition, Service Operation and Continual Service Improvement. Within IT Service Management there are 46 Process and Function based Roles and Responsibilities. Competencies associated with each discipline need to be developed and extrapolated.

At the centre are a sample of life-style and personal qualities which directly impact on IT personnel in a global context.

Positive educational attributes will impact, and they are seen as interjecting into the IT Service Management lifecycle.

7.0 A Way Forward

7.1 Where are we now?

In 2007/08 the UK enrolled 95,650 students on undergraduate and postgraduate courses[4]. Many academics seem unaware of the need to include IT Service Management Practices at undergraduate and postgraduate level.

Education needs to consider

1. Developing "management-type" skills for IT staff which will act as business-enablers;
2. Synthesising personal and inter-disciplinary development and corresponding it to IT Service Management Practices;
3. Ensuring that IT and business personnel have a broader understanding of organisational dynamics when developing business solutions.

7.2 Where should we be?

For those currently in the IT Industry

- Allow integration of trainer-led IT Service Management and Project Management training into Continual Professional Development Programmes which are recognised countrywide;
- Map trainer-led qualifications into academic programmes which then develop "added-value disciplines" such as project management, management skills, systems theory and enterprise architecture;
- Develop national reward schemes or incentives which go beyond corporate performance-related initiatives to encourage IT professionals to develop management-type skills and global competencies and capabilities;
- Provide funds managed through the national IT academies which facilitate the "up-skilling" of IT personnel with management-type skills;
- Provide centres of excellence which consist of business/industry IT experts and educationalists so that IT personnel can share experiences and seek advice.

7.3 Regarding Undergraduate and Postgraduate University Programmes

Interventions may allow:

- The inclusion of IT Service Management Practices to be integrated into the QAA[5] framework;
- Encouragement to universities so that they can provide educational programmes which support the "personalisation" of education *relating to IT*. This will then help to build on the underlying skills and behavioural attributes of those training for a career in IT which will work to global ethics and styles;
- Increased use of cross-discipline development schemes to underpin traditional academic programmes to encourage the development of inter-disciplinary learning. This will add value to the learner experience and provide firm foundations for initial and on-going personal development;
- Encouragement to universities and trainer-led organisations to come together to provide "best of breed" programmes which focus on IT Service Management Practices. It is important that they individuals are comfortable with the progression based on their own learning style and behavioural tendencies.

8.0 Sample Undergraduate and Postgraduate IT Service Management Schemes

8.1 A Sample Undergraduate Programme, SFIA PLUS 4 Levels 1&2, Blooms Taxonomy Levels K&C

- ITIL®[2] Foundation Curriculum
- Introduction to IT Governance
- IT Continual Service Improvement
- Statistics for IT
- Small and large scale IT implementations
- Introduction to Knowledge Management
- Introduction to IT Quality Standards
- Foundations of Project Management
- Core material from BIS/Computing Schemes

Inter-disciplinary Material:

- Statistical Analysis
- Sustainability and Reuse
- Understanding the Communication Process
- Business Ethics
- Business Continuity
- Study Skills/User Experiences/Simulations
- Learning to Learn (Active Enquiry for IT professionals)

8.2 A Sample Postgraduate Programme, SFIA PLUS 4 Levels 6&7, Blooms Taxonomy Levels S&E

- ITIL®[2] Lifecycle and Capability and Managing Across the Lifecycle
- IT Governance Management Issues
- IT Continual Service Improvement
- Leadership for IT Service Management
- Enterprise Architecture
- Practical Application of Systems Theory
- The Effective use of IT Quality Standards
- Effective Knowledge Management
- Advanced Project Management
- Core material from BIS/Computing Schemes

Inter-disciplinary Material:

- Advanced Statistical Analysis
- Sustainability and Reuse
- Advanced Organisational Communications
- Business Ethics for Managers
- Business Continuity for Managers
- Study Skills/User Experiences/Simulations

9.0 University of Bolton MSc in IT Service Management

The University of Bolton is developing a Masters Degree in IT Service Management for delivery September 2009. Course Content:

- IT Service Management as the core material (to ITIL®2 Expert standard)
- Project Management (to PRINCE2 accreditation standards)
- Management Skills; Leadership, Influencing Others, Communication Processes, Solving Problems and Decision Making, Managing Conflict, Managing Performance, Negotiation, Managing and Planning Customer Service
- IT Quality Standards; ISO20000, CoBIT, TickIT, MoR, CMMI, ISO9000, SIX SIGMA, ISO27001, BS25999
- Soft Systems and Organisational Theory
- Enterprise Architecture
- Business Continuity

To work effectively, the scheme will be need to be underpinned by the students' ability to experiment in implementing IT Service Management Practices in a safe environment. Also included will be industry mentoring schemes and work-based experiences for those who already have jobs. Developing and enhancing existing IT Service Management simulations to be included in the programme will be important.

The scheme will also include the integration of trainer-led ITIL®2 qualifications. Entry will be considered for those who have obtained the ITMB Degree and other mainstream IT and Business undergraduate degrees. Those who have limited academic qualifications, but have identifiable work experience in IT/Business will also be accepted. The range of entry should be as wide as possible in order to attract students of varying skills and abilities. The University is currently exploring diverse delivery modes, but at this point in the strategic development, it is anticipated to be delivered by standard taught methods.

10 Conclusion

The evolving global economic environment requires new competencies and capabilities for those providing and supporting IT services. IT is a huge enabler and business and will increasingly be so in the evolving global economy. Maximising IT for competitive advantage through creating a new breed of IT/Business personnel with distinctive global-oriented skills is a national imperative.

There should be a national requirement to encourage the collaboration between training companies, IT Service Management industry experts and educationalists to provide a co-ordinated and collaborative "up-skilling" of existing IT personnel which focuses on managing IT services efficiently and effectively. This can in some part be achieved by mapping existing trainer-led IT Service Management Courses into academic schemes (see sample undergraduate and postgraduate schemes below) This will allow IT professionals to explore the material more effectively and will further help to develop and enhance the current version. For those who have passed the Managers Certificate in IT Service Management (ITIL®2 Expert), should be given the opportunity to map their qualification against a Masters Degree in a University, whilst providing an opportunity to explore other inter-related material such as systems theory and organisational management.

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