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IT SERVICE MANAGEMENT IN THE ACADEMIC CURRICULUM: COMPARING AN AUSTRALIAN AND GERMAN EXPERIENCE

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Abstract

Universities have a responsibility to equip graduates with the knowledge and skills to be productive in their work environment. Recently, the discipline of IT Service Management (ITSM) has become globally recognized as critical to organizations. Academia appears to be lagging industry in providing education in this field. This paper describes the motivation, implementation, outcomes and challenges experienced by two universities, one in Australia and the other in Germany, in designing and offering an ITSM course. Both universities included the curriculum for industry certification for Foundation level examinations and facilitated student access to these examinations. Using a narrative inquiry method, the authors share their experiences and compare these two courses. The feedback from students clearly indicates that the students value the opportunity to achieve industry certification in ITSM. A list of lessons learnt is formulated to assist other universities undertaking similar endeavours. The outcomes of the analysis highlight the need for professional development and industry certification of Lecturers, the importance of networking with local industry practitioners, and the importance of maintaining course materials to keep current with frameworks used in the ICT industry.

Keywords: IT Service Management, IT Infrastructure library, ISO/IEC 20000, industry certification, curriculum design, narrative inquiry, reflective research approach.

1 INTRODUCTION

It is vitally important for universities to provide graduates with the knowledge and skills required by employers. Universities are encouraged to be more industry relevant, practically focused and to add value in tune with industry and government funding pressures (Jovanovic, Bentley, Stein, & Nikakis, 2006). IT service management (ITSM) is defined by Conger et al. (2008) as focusing on “defining, managing, and delivering IT services to support business goals and customer needs, usually in IT Operations” (p. 1). ITSM has become increasingly important as information systems play an essential role in public and private sector organizations (Marrone, & Kolbe, 2011). With the increased emphasis on IT governance, organisations need to ensure that they have effective processes and skilled staff in place to manage their significant investment in IT infrastructure. The IT Infrastructure Library (ITIL®) and the international standard for IT Service Management (ISO/IEC 20000) are recognized as providing best practice frameworks for IT service management and are globally adopted in public and private sector organizations.

An important feature of ITIL, which has facilitated its acceptance, is the internationally recognized certification of accredited ITIL training courses. Today, many consulting firms offer ITIL training in response to the demand for ITIL certified staff. Despite this sweeping adoption by industry, most academic institutions appear to be reluctant to include ITIL in their IT curriculum. Accompanying this is a general lack of interest by information systems researchers in ITIL adoption, as noted by Venkatraman and Conger: “The best practice processes and principles that are part of ITIL: Service Management, Service Delivery, Applications Management, etc. are very much in-line with the teaching objectives of MIS departments. Despite this, however, the level of understanding and interest of ITIL in academia, both on the research and teaching dimensions, significantly lags industry activity” (2006).

The University of Southern Queensland in Australia and the Berlin University of Technology in Germany are early adopters in offering ITSM courses in their curricula. The objective of this paper is to describe the motivation, implementation, outcomes and challenges of designing and offering an ITSM course. By sharing their experiences, presenting, and comparing these two cases, the authors identify the critical issues and lessons learnt to assist other universities in the same endeavour.

The paper is structured as follows. The background section provides a brief introduction to ITIL, ITSM education and ITIL certification. The method section describes the approach taken in this study. The experiences from the Australian and German universities are described as individual case studies and then compared in the discussion section to extract key issues, challenges and lessons learnt. The conclusion summarizes the discussion and presents an agenda for future research.

2 BACKGROUND

2.1 IT Infrastructure Library

The ITIL framework is the most widely accepted approach to managing IT services. ITIL is contained in a set of comprehensive and coherent publications providing descriptive guidance on best practice for ITSM, drawn from public and private sectors internationally. The current version (v3) was released in 2007 and takes a service lifecycle view. ITIL evolved to the international standard for IT service management (ISO/IEC 20000) - a formal and universal standard for organizations seeking to have their service management capabilities audited. Since it was ratified in December 2005 by the International Organization for Standardization (ISO), growth in its adoption has accelerated. As of March 2011, 596 organizations in 53 countries have their certification details registered on the APMG International site (APMG-International, 2011). Of these, 40 German and 5 Australian organisations are listed in the register. The ITIL resources provide a useful body of knowledge for achieving ISO/IEC 20000.

2.2 ITSM Education

ITSM is a relatively new discipline so it comes as no surprise that there is very little academic literature on ITSM education in general or ITSM certification in particular. Although ITSM has been included in the curriculum in a few countries (e.g. in The Netherlands) for many years, it has been largely ignored by most universities in Asia, Australia, USA and the rest of Europe. The need for Business Schools to provide ITSM education was stressed by Beachboard et al. (2007) who claimed that “with ever-increasing adoption of IT management ‘best practices’, industry now leads the academic community by recognizing the need for IT professionals educated in the IT service management (ITSM) processes -- processes directly associated with the delivery of high-quality, cost-effective IT services” (p.555). Industry representatives also strongly advocate the importance of including ITSM principles and concepts within IS curricula. The analysis of a survey conducted in conjunction with itSMF USA revealed there is demand for graduates of IT programs who are knowledgeable about IT service management practices with at least 15,000 jobs per year in the U.S. (Conger, Venkataraman, Hernandez, & Probst, 2009). Based on interviews with IT Service Managers, Cater-Steel and Toleman (2009) reported that in Australia, ITIL skills have been included in position descriptions and are required of IT contractors in some large organizations.

Recently, some IS faculty members have advocated for ITSM concepts to be included in all stages of MIS programs. For example, after reviewing 23 texts used in Introductory IS courses, Conger and Pollard (2009) concluded that although IT Service Management is a vital area, it is largely omitted from texts. They recommend a change in focus to recognize the role of IT in supporting business management, and the need to include process management. Furthermore, Pollard et al. see a need for ITSM to be integrated into Systems Analysis and Design courses (2010).

Awareness has been raised by two initiatives underway to transition ITSM into university pedagogy: IBM’s Service Sciences, Management and Engineering (SSME) and itSMF (Galup, Quan, Dattero, & Conger, 2007). The IBM SSME initiative emphasizes undergraduate and graduate programs that focus on the development and support of government and business services and the internal operations of the IT organization. The second initiative is being promoted by itSMF in the USA, Australia and Europe through annual academic forums to promote the development of academic programs focused on ITSM.

2.3 Certification in Academic IT Programs

Certification, licensing, and credentialing are used in professions such as law, accounting, education, healthcare, and engineering to restrict entry to the profession (Hunsinger & Smith, 2009). IT job seekers and professionals use voluntary certification to indicate their professional qualification in terms of skills and knowledge. According to Hunsinger (2009), the use of certification has been seen as indicating that the IT field is changing from a trade to a profession and planning to obtain appropriate certification can be considered part of a career path and the opportunity for higher wages.

There are many compelling reasons why industry certification can be incorporated to benefit students in academic programs (White, 2007). Firstly, graduates with certificates are more employable and more likely to be considered for promotion than those without (Schlichting & Mason, 2004). Secondly, as previously mentioned in relation to ITSM skills, there is evidence that new graduates are deficient in certain skill sets. Certification may help redress this deficiency (White, 2007). IT certification is endorsed by professional bodies such as the Association of Computing Machinery (ACM) (IEEE & ACM, 2001).

It is recognized that integrating IT certification into degree courses presents a number of possible challenges (White, 2007). Issues include course preparation, additional resources, training and support requirements, and requests from students for credit for completed certificates (Schlichting & Mason

2004). Traditionally, universities have focussed on education rather than skills training. Vendor-based certificates such as those offered by Cisco and Microsoft are more technical than the ITIL certification which focus more on ITSM concepts and the management aspects of IT service.

There is little published research to date on the experiences of Universities including certification alongside ITSM courses. Bentley and colleagues at Victoria University have provided examples of certification models and described how they included aspects of ITIL v2 across a range of courses (Bentley, 2006; Jovanovic et al., 2006; Shackleton & Bentley, 2008; Stein, Nikakis, Bentley, & Jovanovic, 2005). As well as covering the ITIL concepts, Victoria University encourages students to enrol in an on-line ITIL certification course offered by a commercial provider and to sit the Foundation exam in parallel with the Bachelor of Business (Computer Systems Management) program. The Sprott School of Business at Carleton University in Canada teaches ITIL concepts in an ITSM course. Their experience showed that a curriculum overly focused on certification does not resonate well with students, and that sufficient time has to be allocated to appropriately contextualize material (Cater-Steel, Hine, & Grant, 2010).

This study aims to redress the identified gap in the literature by describing the motivation, implementation, outcomes and challenges of designing and offering ITSM courses in Australia and Germany.

3 RESEARCH METHODOLOGY

The methodology used to conduct the research for this study was based on narrative inquiry with reflective processes as an effective means to document the experiences of the Australian and German course leaders. The narrative inquiry approach entails the documentation and analysis of sequential personal accounts of a specific domain of discourse, allowing the research participant to tell his or her own story (Hunter, 2004). Narrative inquiry has been used previously in Information Systems research, for example by Hunter and Tan (2001) to identify the major career path impacts of IS professionals.

As academics, we are encouraged to use reflective practice to prompt considered actions to enhance our teaching (Fry, Ketteridge, & Marshall, 2009). This research was motivated by our desire to improve our ITSM courses. The authors met in Germany and Australia and discussed in detail our experiences in terms of the courses, materials, assessment, history, challenges, and outcomes. After agreeing on the format of the narratives, each author individually prepared their account taking into account student feedback. We then reviewed the narratives and met again to discuss and refine the narratives and to compare and contrast the approaches and outcomes. Each of the authors then had a subsequent opportunity to review and comment on the narratives. Through this process we were able to gain deeper understanding of the relative benefits and drawbacks to the approaches that were undertaken.

4 AUSTRALIAN CASE

4.1 Australian University Background

The Australian University is a regional Australian university with several campuses. There are almost 25,000 students enrolled. Of this number, there is a strong international cohort with 2,000 international students on-campus and 5,000 external international students. The School has a significant number of students from India, Pakistan, China and Malaysia.

4.2 ITSM Course

In 2005, the university ICT Division commenced adoption of ITIL. As training was being conducted on-site for IT professionals, Information Systems Lecturers were invited to attend the ITIL v2

Foundations course. We realized at this point that ITSM was an important and neglected area of research and education and gained approval in 2007 to offer a course in ITSM to undergraduate and postgraduate students.

Two Lecturers completed the EXIN International exam for ISO/IEC 20000 Service Quality Management Foundation Certificate in 2007 and in the next year we participated in the pilot exam of four ISO/IEC 20000 Professional Level Certificates: Support of IT Services, Control of IT Services, Management and Improvement of ITSM Processes, Alignment of IT and the Business.

The first offer of the ITSM course commenced in July 2008. In line with the School's intention to include industry certification as appropriate, approval was sought from EXIN South Pacific to offer students the opportunity to achieve the internationally recognized ISO/IEC 20000 Foundation Certificate.

In developing the curriculum, efforts were made to ensure the graduate qualities of discipline expertise (broader knowledge of IT field), and professional practice (ITSM skills) were incorporated by focussing on the development of particular skills such as professional literacy, problem-solving, written and oral communication, interpersonal skills, and management, planning and organisation skills.

The ITSM course is a third level offer and students are enrolled in the Bachelor of Business (IT Management major), Bachelor of IT, or Master of IS programs. The ITSM course enables graduates to recognize the importance of ITSM and the need for effective processes to manage the significant investment in IT infrastructure. It explains the contribution of ITIL and ISO/IEC 20000 in providing best practice frameworks for IT service management. The course helps students understand the objectives, terminology, activities and associated roles and responsibilities to enable effective management of the service lifecycle. It provides skills for planning and management of IT service processes such as problem resolution, configuration and change control, release into the production environment, as well as promoting effective relationships between ICT and the business and their suppliers.

In the absence of a text book on ITSM, we started with an ITIL v2 book (Palmer, 2005) supplemented by the standard ISO/IEC 20000. With the release of ITIL v3, the text was changed in 2009 to align more closely with the international standard (Van Bon & Van Selm, 2008) but students complained that the style of the book was terse and difficult to read. To provide relief regarding the expense of the textbook, e-book access has been provided since 2009. For the 2010 offer, we included ITIL v3 (Van Bon, de Jong, Kolthof, Pieper, Rozemeijer et al., 2007) while maintaining the focus on the international standard. Many students found the e-book print restrictions frustrating and prefer to use a hardcopy of the text. Unfortunately, the v3 text with the chapter on the ISO/IEC 20000 standard went out of print, necessitating the materials to be updated yet again for 2011. Currently we are using the latest book by Van Bon et al. (2007) supplemented by the University library subscription access to the international standard. Each year, approximately 170 students complete the course.

4.3 Pedagogy

Subscribing to the teaching philosophy of authentic learning (Downes, 2007), the course materials, lectures, activities and assessment are framed around 'real life' constructs and include case-studies and involvement of ITSM professionals. Students are encouraged to relate their own experiences as consumers of IT services to the materials presented. One of the key innovations of the ITSM course is the focus on service. Student learning is enhanced because students are motivated believing that ITSM is relevant to both IT and Business:

"I whole-heartedly believe that universities should offer ITSM as a core subject in the Bachelor of IT and Bachelor of Business. Any student who intends to work for a reasonably sized organisation either in Australia or overseas needs an understanding of this field"

(student JL, 2010); *“this knowledge is essential as I progress in the IT area”* (student TP, 2009).

This course is one of a handful world-wide that recognizes the paradigm shift for IT functions as it deemphasizes the development and management of IT assets and focuses on the provision of quality end-to-end IT services. Regardless of whether students work in IT currently or in the future, it is vital that they achieve a basic knowledge of service management as the service industry now dominates our economy. Student TW confirms the importance of the client focus:

“IT service management is crucial for success regardless if you are working in an internal department or servicing external clients. Studying ITSM provided me with some excellent frameworks for providing exemplary services to clients. The ITSM course offered a practical and industry aligned approach and I have found the material extremely useful in my work life” (2010).

Aspects of professional literacy are also addressed:

“the understanding gained by students of how an IT department does and should work is extremely valuable. Those intending to go into the IT industry can hit the ground running. Those that may not move into the industry still gain benefit as they can better liaise with IT support staff and potentially use the knowledge gained in their own areas of work” (student HM, 2010).

Furthermore, students engage with the course materials as the link between theory and practice is explicit:

“provides the Foundation not only as a base to link to the real life and live environment, but whatever we learn from this course we can apply to our working environment immediately” (Feedback form, 2009).

The scope of the course is broad, covering all the ITSM processes. Students report the broad focus is valuable to prepare them for a variety of specific roles:

“from my work experience it is so important for every part of the IT team, technical and non-technical, to know the basic concepts because change management is a huge part to get right in our team and it took everyone a really long time to understand and follow” (student AT, 2010).

Skills acquired by students contribute to IT projects:

“ITSM directly relates to my work as an IT Project Manager. The projects I deliver will always affect Service Levels, and the knowledge of how this concept of ‘Service Delivery’ ties in with the delivery of my project, greatly assists in the acceptance of my project deliverables and ensuring the best solution is presented to the client” (student TJ, 2009).

Innovative technology is used to enhance learning for both on-campus and external students. For example, podcasts of all lectures are provided via the online Study Desk and professionally video-recorded interviews with the CTO and six IT service managers are video-streamed to students. The Australian students find these resources valuable:

‘the audio lecture recordings were a godsend. It really helps external students know what is presented along with the slides’; ‘Please keep going with podcasts in future’ (Feedback form, 2009).

The online Study Desk includes a discussion forum for weekly posts from students to discuss case studies. Assessment in the course comprises multiple choice tests in week three and week six, a major assignment (case study) in week nine and a final exam at end of semester. The final exam includes a multiple choice quiz (MCQ) and case study. Students are provided with the case study in advance of the exam.

4.4 Industry Certification

Students who can access the University's campuses are encouraged to sit the EXIN International ISO/IEC 20000 Foundation exam through the university. Students in other locations are advised that the exam is widely available internationally at Prometric and Pearson Vue testing centres. The EXIN certificate is optional and does not affect their final grade in the course.

Offering the international certificate required a formal contract between the university and a licensed examination institute. To achieve accreditation from EXIN International as an accredited course provider and examination centre, it was necessary for the university to pass a rigorous audit. To date, 30 domestic students have attempted the ISO/IEC 20000 Foundation Certificate and 25 have achieved the 65 percent needed to pass the examination. Feedback from students confirms that the certificate being highly valued by industry adds value to university qualifications:

“Achieving industry recognised certificates as part of a university course is a rare opportunity that greatly increases the value of my degree ... The company I work for (as do most professional organisations) look extremely highly on Industry Certified training to complement classroom learning in University, as it gives graduates knowledge that would otherwise cost the company thousands of dollars and many years of training” (student TJ, 2009).

Many students are motivated to succeed in their study as they believe the certificate enhances their career prospects:

“my goal is to eventually be employed as a network administrator and ITSM is essential to me achieving that goal” (student JL, 2010); “Because I wanted an additional certificate to show that I knew the concepts” (student AT, 2010).

From an assessment perspective, the industry certificate provided an opportunity to consolidate and test knowledge:

“the exam also served to cement my own knowledge of the subject matter for both university assessment and implementation in the real world” (student HM, 2010); “it is good at the end of studying something to test your knowledge and I liked having that challenge” (student AT, 2010).

Feedback from industry stakeholders also confirms the value of the course and certificate.

5 GERMAN CASE

5.1 German University Background

The German University is located in Germany's capital city. Research and teaching covers a broad spectrum of academic disciplines. There are approximately 30,000 students enrolled. About 20 percent of the students are foreign nationals. The department offering the ITSM course is part of the faculty of Economics and Management and offers bachelor and master courses primarily for industrial engineering and computer science.

5.2 IT Service Management Course

The University first offered a course on IT service management (ITSM) in 2007. Based upon the results of extensive research and practice projects in the area of service-oriented IT Management (e.g. Zarnekow, Hochstein, & Brenner, 2005), ITSM was considered to be an important new subject within the curriculum for bachelor and master programs. The course is part of the curriculum of the master studies in industrial engineering and in computer science. In addition, it can be taken as an elective course by all students of the university interested in IT management as well as by students of other

universities in Berlin. The course is offered twice a year and is attended by an average of 30 students per semester.

Many students can directly relate to the ITIL concepts due to their own job experience:

“In my side job at an IT service provider I perceive a great optimization potential and I have been looking for ways to tap it. The strong growth of the IT infrastructure at this company increases the costs and the managerial effort required. I hope that ITIL will provide a good means to improve IT management” (student AK, 2010); “I can closely relate to the issues discussed in this course because of my experienced in my side job”(student PM, 2010).

The relevance of the ITIL framework for their future jobs is highly rated by many attendees:

“A deeper understanding of the concepts explained in this course are increasingly taken for granted in the IT industry” (student ML, 2010); “This course is particularly interesting for students who already work or plan to work in IT management” (student SN, 2010).

The course material was created partly based on the results of the research activities. In addition, central processes and functions from the ITIL v2 framework were selected and put on slides. In 2009, the course as well as the material was updated to ITIL v3. As a consequence, the structure of the course was oriented at the lifecycle of IT services and the newly introduced functions and processes (such as event management and request fulfilment) were added. In addition to the slides, students are advised to use several textbooks and other sources. For the preparation of the final course exam, students are recommended to use the ITIL v3 glossary.

Since 2008, the university has offered students the opportunity to take the ITIL Foundation exam together with the course exam (see section 5.4). The course covers a large part of the Foundation exam, the remaining areas have to be studied by the students independently.

The final exam for the course and the Foundation exam are carried out separately but offered on the same day. This allows for a single combined exam session of two and a half hours. The combined offering of an ITSM course and the Foundation examination is perceived as a convenient option, to take advantage of the respective synergies:

“This setup is a relatively easy and economic way to receive a certification, which is highly regarded in the IT industry” (student PM, 2010).

5.3 Pedagogy

A cornerstone of the teaching at the university is the direct association of theory with practice examples. In the IT service management course, this is achieved by presenting direct insights from ITIL implementation projects carried out by the Lecturer. Secondly, a guest speaker is invited each semester, a practitioner who works for an IT service provider or an IT consulting firm. This event allows students to further reflect their theoretical knowledge of ITIL and to enter into a discussion with practitioners. The results of the examinations clearly show that the stronger the association of ITIL concepts with practice examples, the deeper is the understanding of such concepts.

The practice oriented didactical teaching approach as well as the importance of the philosophy of service orientation is highly valued by the students:

“I particularly appreciate the course because of its practice orientation” (student GS, 2010); “Service orientation is still a rather new and highly relevant concept for many IT firms”(student GM, 2010).

The interdisciplinary orientation of the IT service management course, which is located right at the interface between economics and computer science is appreciated by students from both parties:

“Even for me as a computer scientist, this course offers valuable findings” (student FA, 2010); “This course fits perfectly the educational requirements for me as a future IT manager” (student AK, 2010).

In addition to practice examples and a guest lecture, a one day simulation game is carried out as part of course: the IT service management game ‘Apollo 13 – an ITSM Case experience’ by the Dutch firm Gamingworks¹ allows participants to experience the ITIL processes in a game situation, which closely resembles a real world application context. The ‘Apollo 13 – an ITSM case experience’ is an interactive business simulation workshop. During this workshop the students see, feel and experience the benefits of applying best practices, such as ITIL, on IT organizational performance: ‘cost of ownership’, ‘effectiveness and throughput of processes’, ‘customer satisfaction’. At the same time students experience what it takes to successfully implement a process-based approach and getting buy-in from all involved.

As course material, PowerPoint slides are provided to the students. These slides have a twofold purpose: firstly, they support the lecturing. Secondly, they contain enough information for the students to recapture the content. Hence, the slides provide more information than what would be required for a complementary use during lecturing.

The final exam, in order to allow a differentiation, consists of three parts which differ in the level of demand: the first part, similar to the ITIL Foundations examination, contains multiple choice questions. The second part focuses on knowledge reproduction with questions, which especially emphasize on the interrelation of ITIL processes. The third part requires knowledge transfer: short cases are presented, which need to be solved with the ITIL knowledge provided.

5.4 Industry Certification

The ITIL v3 Qualifications scheme provides a modular approach to ITIL certification, and is comprised of a series of certifications focused on different aspects of ITIL Best Practice, to various degrees of depth and detail. The ITIL v3 Foundation certification² represents the entry level. The purpose of the ITIL Foundation certificate in IT Service Management is to certify that the candidate has gained knowledge of the ITIL terminology, structure and basic concepts and has comprehended the core principles of ITIL practices for Service Management. The ITIL Foundation certificate in IT Service Management is not intended to enable the holders of the certificate to apply the ITIL practices for Service Management without further guidance. The target group of the ITIL Foundation certificate in IT Service Management is drawn from individuals who require a basic understanding of the ITIL framework and how it may be used to enhance the quality of IT service management within an organization. Moreover the certificate addresses IT professionals that are working within an organization that has adopted and adapted ITIL who need to be informed about and thereafter contribute to an ongoing service improvement program.

The German university does not carry out the ITIL v3 Foundation examination itself, because this would require a formal EXIN accreditation. Instead, the examination is carried out by the TÜV SÜD Akademie GmbH, which provides the examination material and issues the certificates, in cooperation with the German IT Service Management Forum, which provides an examiner. This allows the offering of special rates for the certification, which are 40 percent under market price. This is thanks to the German IT Service Management Forum, which supports the university in an honorary capacity. Moreover, the certification does not require a dedicated and often expensive training. The course covers a large part of the subject matter. In addition to the sources provided for the course, there are

¹ <http://www.gamingworks.nl/pbs/Apollo13-ITSM.php>

² <http://www.itil-officialsite.com/Qualifications/ITILV3QualificationLevels/ITILV3FoundationCertificateinITServiceManagement.asp>

various textbooks for the preparation of the ITIL v3 Foundation exam on the German book market, one of which is made accessible to its students by the university (Ebel, 2008).

The certification is well received by the students, who mainly expect job advantages:

“This exam is good for my CV” (student GS2010); “With this certification, I hope to convince decision makers of my competencies in IT management” (student ML 2010).

Many employees regard this examination as a widely accepted and necessary qualification:

“I have a side job at an IT Company, which appreciates this examination as an advanced training and even provides the financing for it” (student AK 2010); “I have seen many job postings, which include ITIL knowledge and experience as a compulsory requirement” (student FA 2010).

6 DISCUSSION

Although there are some differences in the way the two universities implemented ITSM in their curriculum, they followed a similar journey. The salient points from the cases are summarised as shown in Table 1 and the key issues are discussed.

	Australian Case	German Case
<i>Student Demographics</i>		
University total students	25,000	29,000
No. ITSM Students / year	170	60
Domestic / International.	Primarily international online	Primarily domestic face-to-face
Full time / Part time	Both full time and part time	Primarily full time
Undergraduate/Post graduate	Undergraduate & postgraduate	Primarily postgraduate
<i>Course</i>		
First offered	July 2008	April 2007
Focus	ISO/IEC 20000 and ITIL v3	ITIL v3
Delivery mode	Distance mode and on-campus	on-campus
Materials	Van Bon book, ISO/IEC 20000 standard, ppts, podcasts, videos, case studies.	Zarnekow book, ppts, Apollo simulation game material, case studies, videos
Course Assessment	2x Multiple Choice Quiz (MCQ) tests, Assignment (case study), Final Exam (2 hour)	Final Exam (1 hour)
Course duration	12 weeks of study	6 weeks of lectures + 1 day simulation game
Certification Exam	EXIN ISO/IEC 20000 Foundation Offered at 3 campuses or Prometric offices	ITIL v3 Foundation Offered at campus
Examination governance	University and materials accredited by EXIN, supervised by accredited supervisor (university staff member)	Exam provided by TUV-SUD, supervised by member of itSMF Germany
<i>Lecturer Professional Development</i>	4x ITIL v2 foundations 3x ISO 20K Foundations 2x ISO 20K professional level	4x ITIL v2 foundations
<i>Challenges</i>	EXIN International accreditation as course provider and exam centre.	Adapting course structure to larger groups of students. Broader spectrum of ITIL v3 Foundation certification.
<i>Moving Forward</i>	Offer ITIL v3 exams. Incorporate more case studies.	Offer German and English language courses.

*Table 1. Comparison Australian and German courses and experience***6.1 Discussion of Similarities and Differences**

Although both universities' ITSM courses teach all the ITIL v3 concepts and processes, the Australian course also includes a focus on the International Standard ISO/IEC 20000. In fact, it is the ISO/IEC 20000 Foundation certificate that is offered to the students. Three factors influenced this decision. Firstly, at the time the university sought accreditation from EXIN International as a Training Centre, v3 of ITIL was about to be released and the international standard was considered more stable. Secondly, EXIN South Pacific offered students a 50 percent academic discount on the ISO/IEC 20000 exam, but could provide only 30 percent discount on the ITIL Foundation exam. This is because OGC (the owner of ITIL) has licensed APMG to accredit all ITIL products. The third reason was because EXIN South Pacific had facilitated the Lecturers' achievement of advanced certificates in ISO/IEC 20000 examinations. To offer ITIL v3 exams, the university would need to invest in advanced ITIL v3 training for Lecturers. However, the course does adequately cover the content required for the ITIL v3 Foundation examination, and some students have successfully taken the ITIL v3 exam at a Prometric examination centre, foregoing the academic discount.

The German university, on the other hand, did not go through the arduous accreditation process to become an examination centre, preferring to negotiate with TUF SUD who supplied the ITIL v3 Foundation exams with an academic discount.

Another major point of difference is in the mode of delivery of the ITSM courses. The Australian university cohort is mainly enrolled in distance mode, whereas the German students attend face-to-face classes. As a result, the German university has the advantage of being able to invite practitioners as guest lecturers and include the Apollo simulation game. To overcome the isolation experienced by distance-mode students, the Australian university relies on video interviews with practitioners, and audio recordings of lectures.

The courses differ in terms of assessment. The Australian course has four assessment items and the optional ISO/IEC 20000 certification exam whereas the German course has a final exam followed by the optional ITIL v3 exam. The frequent assessments help to ensure engagement of distance mode students throughout the semester.

6.2 Australian Case: Challenges and Future Directions

The main challenges encountered to date relate to the course materials and the lack of a suitable text book and teaching materials. The continual upgrading of standards such as ITIL and ISO/IEC 20000 make it difficult to keep the course materials and academic skills of the Lecturers up to date. The uptake of ISO/IEC 20000 by Australian organisations has been slow in comparison to the level of interest in ITIL v3. We would like to change the focus of the industry examination from ISO/IEC 20000 to ITIL v3. This would require re-accreditation of the materials by EXIN International and the Lecturers would need to upgrade their skills from v2 to v3.

The cost of the Foundation exam for students (currently US\$150) could not be borne by the university and may be prohibitive for many students, however regardless of whether students elect to sit the exam or not, it is a career advantage for graduates to have covered the concepts. As a result, graduates are job-ready with the skills sought by employers.

Initially we hoped to include hands-on use of an ITSM tool to give students experience with state-of-the-art systems for configuration management. This idea was abandoned as providing access for external students was problematic and the extent of the essential course materials did not leave time to teach a complex ITSM tool. The same factors transpired against offering an interactive game such as Apollo 13. Preparing the required documentation to achieve EXIN accreditation was more time-consuming than anticipated but is expected to provide rewards in the future as the School of

Information Systems is now incorporating industry certification into other courses e.g. IT security and SAP.

In the future, more case studies will be incorporated into the materials and industry resources such as webinars will be used to stimulate discussion amongst students. As students have enquired about more advanced courses in ITSM we are considering an ITSM specialisation within the Master of Information Systems program.

6.3 German Case: Challenges and Future Directions

The simulation game offered at the German university as part of the course is very resource- and time-consuming: a whole day with a trainer is required to provide this game for a maximum of 15 students. In addition, each game generates costs for materials and the license fee. For this reason, it would be a great challenge to provide this game for a large group of students. For such groups, a software based game with less supervision would be more efficient. Nevertheless, the learning experience of the simulation game is mainly caused by direct group interaction and communication. A software based game would most likely not yield similar learning results.

The transition from ITIL v2 to ITIL v3 represents another major challenge: first of all, new textbooks are required. The present availability of v3 textbooks which are appropriate for teaching is limited. Most books represent summaries of the ITIL v3 content without a didactical approach. Most notably, good practice examples are often missing in v3 textbooks. Secondly, the transition to v3 came with a significant extension of the content volume. In the course, only selected ITIL processes and functions are covered in detail, whereas others are only mentioned briefly or not at all. The Foundations exam requires the coverage of the complete ITIL framework. For this reason, the extra effort required for the students to take the Foundations examination increased with v3. Some students decide against taking the Foundations examinations due to time restrictions:

“I have many other final exams coming up and simply not the time for the extra preparation required for the Foundation exam” (student DP 2010).

In addition, even though the examination fee is significantly lower than on the open market, it still represents a restricting factor for many students:

“I have a tight budget and cannot afford the examination fee” (student LW 2010).

7 CONCLUSIONS

In this paper we have described the motivation, implementation, outcomes, and challenges of designing and offering an ITSM course with industry certification in a university curriculum. The experiences of two universities, one in Australia and one in Germany are compared. This cross-national comparison highlighted a number of similarities as well as a few differences between the courses in the different settings. In both instances a key goal of developing the ITSM courses was to re-orient students' conceptions of IT services provision in organizations in a bid to enabling graduates to function productively in service-oriented workplaces. Student learning and engagement was enhanced by the use of an experiential approach incorporating case studies and participation of industry professionals. Feedback from students clearly indicates that they value the content of the course and are motivated to succeed, recognising that ITSM skills are essential to be productive in their professional work environment.

This paper has provided an opportunity to evaluate the approach taken to implement ITSM in the curriculum and the resultant student outcomes. There are very few reported accounts of universities including ITSM in the curriculum and this provides guidance to others, and in so doing responds to the call by Adelman (2001) for comparative curriculum studies. Unlike many IS sub-disciplines such as database and programming, ITSM is holistic and integrative in nature and is thus more reliant on

either work experience, or a pedagogical approach that simulates work experience and context, to properly understand it and its implications within an organization.

The outcomes of the analysis highlight the need for professional development of Lecturers and consideration of the breadth and depth of content. Industry certification is highly valued by students but needs to be complemented by sound academic practices.

Based on our experience, we offer the following advice to help others who are considering a similar endeavour:

- Take steps to encourage and fund industry certification of Lecturers
- Engage your local itSMF chapter to access guest speakers and provide opportunities for case studies and research projects
- Build a network with other academics interested in ITSM, for example, the AIS Special Interest Group on Services (AIS, 2009) and the itSMF Germany working group “ITSM in Universities”
- Introduce services and processes early in the curriculum
- To bring ITSM theory to life, use case studies, and if possible, games for teaching and assessment
- Understand the content of such courses will need to be updated as new versions of the framework are published.

Feedback from students who are currently working in the field indicate the important contribution ITSM knowledge can make in the workplace. Practicing managers are encouraged to develop their understanding of ITSM as this will help shape their decision making around IT service provision in organizations.

For any university prepared to include ITSM concepts and industry certification, there are many benefits possible. As well as the promise of an increase in the number of student enrolments and subsequent income, the reputation of the university could be enhanced as it would be seen as providing knowledge and skills in demand throughout the global business community. Students will come out of the programs with the capacity both to critique and apply concepts learnt in real-world settings making them immediately valuable to prospective employers.

Several limitations as associated with this study. The courses used in this comparison have only been offered for a couple of years. Consequently there has been limited opportunity for substantive feedback from graduates employed in industry. While there is some anecdotal evidence suggesting the beneficial impact of the courses, a more formal survey of graduates would be useful in drawing further conclusions. More formal evaluation may take the form of pre-graduation and post-graduation assessment of students’ perceptions of the relevance and benefit of the courses and industry certification. Since the comparison was between only two university programs the findings could be further strengthened by including other programs from different universities in the future studies.

In closing, both the Australian and German universities have successfully implemented an ITSM course with a service focus and given students the opportunity to achieve industry certification. In overcoming the challenges, they have responded to the demand from industry and enhanced the career prospects of graduates.

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Notes: ITIL® v2 and v3 – Are registered trademarks of the UK, Office of Government Commerce.

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