# Editorial

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**Biographical notes:** Pat Costello is currently Head of Information Systems and Security Research in the School of Technology at the University of Wolverhampton. From 2004 to 2011 she worked with the West Midlands Regional Development Agency ICT Cluster acting as advisor on policy regarding the innovation and R&D capabilities available in the region's higher education institutes. Prior to joining higher education, she worked in SMEs in a range of roles mainly involving implementing technology solutions to support new business models. She has been a Lecturer at the University of Wolverhampton for the past 15 years.

Ann Latham is Associate Dean in the School of Technology at the University of Wolverhampton. She has been an academic at the University for over 25 years, and prior to this had experience working in IT in commercial organisations, designing and developing computer systems. She has extensive experience in the field of Information Systems Management and has carried out considerable research into the needs of the IT industry. She has published many journal articles and conference papers, and has spoken at several international conferences. She is a board member of the UK Academy for Information Systems and a council member of the Institute for the Management of Information Systems.

Introducing technology into any business is challenging, requiring a culture change and extensive education, knowledge and training. Within Small and Medium Enterprises (SMEs) this can be problematic, particularly given the potentially limited resources within the organisation. It was established by the Bolton Committee in the United Kingdom (UK) in the early 1970s the importance of SMEs to world economies, and yet in recent years this group of businesses has been neglected by active researchers in favour of other topics. In our first special Issue on "ICT adoption – Beyond the Rhetoric" we explained how the increase in the adoption of ICT in organisations has greatly transformed the manner in which companies conduct business. The papers in Special Issue 1 included some very special insights in regard to broader issues of ICT Adoption and its effect on so many SMEs. It demonstrated that in the broader context ICT plays a crucial role in the present knowledge based economy, having a remarkable potential to contribute to sustained competitive advantage for business. This fact, coupled

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with the proliferation of SMEs, demonstrates why this area is both exciting and pragmatic as a research topic.

The response to our initial call for papers was both encouraging and insightful in that it demonstrated that the topic is still of interest to researchers the world over. The quantity of good quality papers we received has allowed us to produce this second Special Issue "ICT Adoption: Issues, Challenges and Perspectives" that we are sure will again excite researchers in this field. This second Special Issue allows us to approach the topic from a different perspective and gain an in depth view on more detailed areas with each paper chosen for its in detailed perspective on a specific area. We would hope that once again this would encourage more researchers to delve into this fascinating and exciting area of research.

The area of education, competencies, adoption and growth in SMEs has been of significant interest in the past in fact Storey (1994) conducted a longitudinal study which found education to be the foremost of 15 factors that he unearthed in regard to successful growth in SMEs. This was later confirmed by numerous researchers for e.g., Cooper et al. (1994), Van Akkeren and Cavaye (1999), Duhan et al. (2001), De Clercq and Arenius (2003), Thompson and Martin (2005), Levy and Powell (2005), Costello and Reece (2005). Our first three papers in this issue once more take up the area of education and competencies in SMEs whilst the next three papers in this issue offer a new insight into old problems by demonstrating specific methodologies that may be of use to SMEs facing technology adoption.

The first paper by Heilyn Camacho (Multi-Layer Integration Methodology for Development of ICT Competences in SMEs) discusses how the action learning approach and the triple helix theory may offer frameworks to align the existing resources and facilitate the adoption of ICT in SMEs in developing economies. The interesting point of this paper is that it is a concrete example of the triple helix model in action, with projects developed between university, industry and government based on action learning with the objective of supporting SMEs in their process of adopting ICT. As editors having experience in this area we can comment that this is a real achievement as even getting SMEs to take part can be a very difficult task. Their paper provides a good example that may help others involved in this field. The research proposes that collaborative work among university, industry and government be guided by the action learning approach to provide a concrete holistic strategy to support the SMEs in their challenges in the adoption of ICT in their business process. The interesting findings suggest that the triple helix needs to find ways of motivating, engaging and developing not only the practice, but also the self-respect of the acting SMEs.

The second paper by Pat Costello, Martin L. Jackson and Robert Moreton (Education as a Determining Factor in ICT Adoption: A Case Study of ICT SMEs) continues the theme of education by examining the adoption of IT by companies who are in the IT industry themselves. One might assume that such companies would have a head start in this area, but this paper demonstrates that not only is this not the case, but there are specific educational concerns in regard to the owner-manager that may be acting as an inhibitor to adoption of technology in these supposedly technology literate companies. The researchers also claim to uncover the fact that some common misconceptions are as endemic in ICT companies as in any other sector. This research is unique in that it targets one sector only which has often been assumed not to need support in ICT adoption. This paper concentrates specifically on micro-sized companies and the education levels and skills employed for company success.

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In our third paper by Michael Quigley and Maria Burke (Low-cost Internet of Things Digital Technology Adoption in SMEs) they delve into the potential beneficial uses of low-cost digital technology on estate agent property listings. Yet again education and competencies are raised as they claim that the adoption of the technology is not hindered by the availability of resources, but by lack of knowledge and training held by SMEs. The research also attempts to illustrate how SMEs could improve their business processes by utilising new digital technology as an effective method for disseminating information to a target audience at the point of request, without significantly increasing costs. It interestingly demonstrates that benefits can be gained through relatively little training or expense, which may have otherwise hindered the adoption by SMEs. This is demonstrated through the use of two related case studies in which they found that digital technology was of use to small businesses in helping them gain more information regarding customer interactions with offline media. Competitors then began to realise that the companies chosen for use in the case studies may have achieved a competitive edge. Did the research itself drive competitive advantage and rivalry in this situation? We will let you decide.

In our fourth paper by Gill Green, David Hagan and David Caton Roberts (Multiview as a Reflective Framework: Enabling Reflection, Transforming Practice) a methodology for practitioners is proposed which they claim encourages and aids the development of meaningful reflection on the practical values and theories which inform everyday actions which are a source of continuous learning and also define professional practice. In this paper there are two case studies which are explored during the development of separate information systems. The authors examine how a systems design methodology, Multi-view, can be used as a reflective tool to aid practitioners and academics further develop practice. The paper demonstrates that by using a reflective framework, practitioners were able to extract meaningful reflective outcomes on both practice and praxis. This is an interesting theory given that so many SMEs claim they are resource starved and although only a small number of examples are used the authors call for others to take up the 'framework for reflection' as a model for future development and adoption elsewhere.

The focus of the fifth paper by Bidit Lal Dey, Ben Binsardi and Masoon Ahmed (The Acceptance and Adoption of Mobile Telephony by Bangladeshi Farmers: A Qualitative Enquiry) is the use of mobile telephony and how it may enhance farmers' productivity by bringing efficiency in the production and marketing of agricultural commodities in developing countries. The authors claim that there is paltry existing literature offering evidence of why and how farmers in developing countries could adopt such technologies. Therefore this papers interest is in the ethnographic observation methodology used in this situation, which, together with interviews and focus groups have been combined to reveal factors involved in these Bangladeshi villages. Basing their work on the much cited and criticised Technology Acceptance Model (TAM) (Davis and Venkatesh, 1996) they develop the model to suggest that the intention to accept a new technology is determined by users' positive perceived value, perceived ease of use and the availability of social and infrastructural support. They then offer a new dynamic model of technology acceptance which complements the existing understandings of technology adoption by less affluent users and attempts to fill a gap in relevant literature.

The final paper in our Special Issue Part 2 is by Marie Griffiths, Aleksej Heinze and Anthony Ofoegbu (The Real SAP<sup>®</sup> Business One Cost: A Case Study of ERP Adoption in an SME). In this paper we move to a group of UK based service management SMEs

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that invested into SAP® Business One. The authors offer an action research case study which claims to highlight the real cost and difficulties faced in moving to the one single SAP system and the process that followed in order to identify third-party vendors that can integrate or customise SAP® Business One. The study found that there are additional costs required to ensure a 'fit-for-purpose' solution to close the gap between strategic needs and the existing SAP Business One solution. The actual implementation cost of the ERP was found to be approximately double the initial SAP costs. The real costs included issues that had not previously been speculated including time for: process reengineering, strategic decision making, software add-ons, staff-training, project-management and software maintenance. This paper provides a real life example of the 'devil in the detail' and a warning to SMEs considering this solution.

This Special Issue has contributed a second set of research into ICT adoption and provided a snap-shot of some of the work currently being carried out in the field in SMEs. SMEs play a vital role in the economy of many countries, and it is generally acknowledged that ICT can play a vital role in the growth and sustainability of such companies. As such, we hope that this Special Issue along with its' predecessor will encourage other researchers to pick up the baton and continue this vitally important research in this fascinating area.

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