

# **International Journal of Business Science and Applied Management**



A fresh approach to business and management research

[www.business-and-management.org](http://www.business-and-management.org)

ISSN 1753-0296

## **Editorial:**

### **New Frontiers in e-Business and e-Government**

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#### ***Abstract***

This special issue will explore a wide range of issues, from the emerging opportunities and challenges of MMORPGs, the new media industries, emerging technologies and applications and new Challenges in e-Government and e-Public services, to using e-Business to facilitate regional economic developments.

**Keywords:** e-business, e-government, e-public services, new technologies

## **EDITORIAL**

The first Internet boom started in the mid-1990s, and it quickly led to a dot.com bubble on the stock markets, which eventually burst in 2001. However, the market recovered very rapidly and by 2005 there was already talk of a second Internet boom, which is much more robust than the first one. For many commentators, the Internet boom itself has never stopped, because even during the stock market downturn people from all over the world continued to join the Internet to search, chat, e-mail and spend money. The way we work, play, communicate, learn and shop has changed significantly, and in business and governmental organisations throughout the world new strategies, new business models and new organisational designs have emerged to exploit the new possibilities enabled by the Internet and related technologies.

Furthermore, continuous rapid developments in Internet and related technologies, infrastructure, services and applications are leading to new opportunities and challenges that could not even be envisaged only a few years ago. Many significant developments emerging from the first round of the Internet boom - Google (search), eBay (auction), Amazon.com (e-tailing), Wikipedia, Lastminute.com, Easyjet (low cost airlines using Internet based low cost models), text messaging, instant messaging, online chat rooms, online communities and forums, have been joined by Social networking Sites (e.g. Myspace, Facebook, Bebo), YouTube, Skype, free and paid music and ring tone downloading, blogs, podcasting, and perhaps most significantly, MMORPGs (e.g. Second life, World of Warcraft). New developments, from Web 2.0 and SOA (service oriented architecture), to shared services and RFID ... are in combination bringing about radical changes that could perhaps be appropriately described as the 'Second Internet Boom'.

As well as private sector organisations embracing these advances and exploring potential business opportunities, many central and local governments and various types of non-business organisations such as health services and voluntary organisations are making significant investments in investigating emerging possibilities and applications brought about by the Internet and related technologies. Clearly, the potential benefits are huge but the challenges involved are also much more sophisticated than most people have envisaged and the full social, cultural, economic and policy implications of these developments are still poorly understood. In particular, after the first round of putting governmental information and public services online, especially through the pursuit of joint-up government in many countries to break down departmental barriers and improve the quality of information and services, many extremely difficult conceptual, technological and regulatory challenges – along with methodological issues for researchers and developers - have been highlighted. Therefore, the enormous business opportunities associated with these internet and related technology developments need to be systematically investigated in conjunction with the potentially even greater challenges.

This special issue will explore a wide range of issues, from the emerging opportunities and challenges of MMORPGs, the new media industries, emerging technologies and applications and new Challenges in e-Government and e-Public services, to using e-Business to facilitate regional economic development. We hope this special issue will stimulate discussion and debate and promote focused research in this area, contributing to the development of relevant theory, practice and policy in the increasingly networked, knowledge based economy. This is still a rapidly evolving area, and more research is clearly needed. We welcome any comments, feedback, suggestions, and constructive criticisms.

Any errors remain the responsibility of the authors.

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## **New Frontiers in e-Business and e-Government: Emerging opportunities and Challenges**

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### ***Abstract***

This paper is intended to provide an overview of the key issues that emerged from the presentations and discussion of a successful workshop organised by the British Academy of Management (BAM) e-Business & e-Government Special Interest Group at Newcastle University Business School on 9-10 November 2006. In addition to introducing the three main papers and the research note, which are based on the keynote presentations but have been revised in light of the discussions and questions as well as reviewers' comments on early drafts of the papers, we also highlight some of the key questions the participants raised and debated as well as issues that emerged from the open discussions.

**Keywords:** e-business, e-government, e-public services, new technologies

## INTRODUCTION

Professor Feng Li, Convener of the e-Business and e-Government Special Interest Group, opened the workshop by outlining the key aims, which were primarily to identify the main issues at the forefront of this exciting and dynamic area of research. Many people are currently researching the e-business and e-government phenomenon from a range of different fields, such as strategy, information systems and marketing, but often e-Business and e-Government are on the fringe of their research. In order to gain a more coherent understanding of e-Business in general, it is important that the field is examined in a more systematic and all-embracing manner. Key issues surrounding e-Business that require further investigation include the most significant technical and non-technical developments, current and future applications, emerging opportunities and potential implications. Many developments and opportunities are arising which are turning industries upside down and enabling them to be transformed e.g. newspapers, music. Moreover, it is essential that once the most important issues are identified, existing frameworks are examined to determine their appropriateness for analysing the resulting business, political, social and economic issues.

Throughout the workshop, participants presented, discussed and debated a wide range of emerging issues in the broad area of e-Business and e-Government, ranging from the uncharted territories of MMORPGs and their profound business, social and policy implications, to the very sophisticated conceptual, methodological, theoretical and practical issues in the e-Government and e-Public services.

The keynote presentations and subsequently the three main papers and the research note were delivered by:-

- Professor Tony Manninen, University of Oulu, Finland – “MMORPG: Is it a product or is it a service - challenges and implications of online games”
- James Cornford, AIM Public Services Fellow – “Focusing on Customer Focus in E-government”
- Professor Mike Martin, Newcastle University – “Identity and Relationship Management: The new challenges in public and commercial services”
- Professor Paul Beynon-Davis, University of Cardiff – “e-Business maturity and regional development”

Further discussions took place on ‘New Media Industries’ and ‘Emerging Technologies and Applications’.

### **“MMORPG: Is it a product or is it a service - challenges and implications of online games”**

The first keynote presentation, by Professor Tony Manninen, focused on perhaps one of the most profound technological developments – Massively multiplayer online role play games (MMORPGS). MMORPGS emerged in the 1990s and are virtual games involving virtual characters, levels, tools (e.g. weapons, islands), buying and selling resources and gaining social status. Drivers such as rewards and puzzles motivate and challenge people.

Recent MMORPGS have become far more than just computer games and indeed many of them have developed into goldmines for economic activities and social interactions. Millions of players are spending as much as 40 hours per week playing them, interacting with virtual characters of other players and building up networks of relationships and bonds. There are business opportunities for product and service based models. Current business models are evident in a variety of forms: subscription-based; one time fee; free basic services and charges for additional services; free games and advertisement revenue. Future Business Models could potentially place more focus on the secondary markets emerging and may involve trading virtual assets outside the MMORPG e.g. e-Bay. This will of course have a range of political and legal implications. Business models also need to focus on the significance of the total business value that may be attained through product and service- based models and the potential level of sustainable competitiveness advantage.

Opportunities also abound for developing business applications e.g. moving away from mainstream entertainment to using game-like features in business applications e.g. teaching, marketing, training, process modelling. In process modelling the game could be used to get people interacting, for gathering process data and analysing data. For example, it could be used for process modelling an area such as hospital management. However, the question needs to be raised as to whether or not it is rationally viable to connect the virtual fantasy worlds of MMORPGs to real world business applications and would practitioners be able to connect, synthesise and draw meaningful business value from both worlds? This is an area of research that requires future investigation.

### **Focusing on Customer Focus in E-government**

The second keynote presentation, by James Cornford, examined the online interaction between government and citizens (customers) within the UK. Most of this level of interaction takes place with local government e.g. local authorities, schools, local health services.

The presenter argues that despite customers being supposedly placed at the centre of e-government within the UK, it has probably been one of the most underperforming aspects of e-government in the UK. This had led to the rising phenomenon of 'customer focus without customers'. A number of potential reasons are offered for this, including customers being resistant to change, poor online design and a lack of marketing.

However, the presenter offered a more fundamental reason for the lack of customer participation, which relates to the way in which customers have been represented within e-government CRM systems. Customers have been represented as one set of individuals that are rational, coherent, self knowing, self-interested, time pressured, demanding and as having rising expectations of the standards of public sector services. Moreover, the CRM systems are programmed to respond to these particular types of individuals and in certain types of ways. The CRM systems are expecting customers to act in certain ways and say certain things and are unable to handle a deviation away from this. Therefore, unfortunately, for a large proportion of customers who have been misrepresented within the systems, this creates an 'I'm not listening effect'!

Rather than involving customers in the way in which they are represented within e-government CRM systems, customers have been represented in a way which is meaningless to the majority of customers. Representation within CRM systems is not necessarily a bad thing but only if customers are engaged and take a role in deciding how they are represented. Consideration needs to be given to whether or not it would be useful for a coherent framework to be developed that provided guidance on representing customers more accurately in CRM systems. Furthermore, is it just down to one fundamental issue or a range of issues and do these vary in different environments and sectors?

### **Identity and Relationship Management: The new challenges in public and commercial service**

The third keynote presentation, by Professor Mike Martin, concerned the nature of identity and relationship management in the public and private sector, and the related challenges. In particular, he suggested that despite the, stereotypically, outdated nature of systems in the public sector - the private sector could learn from the public sector on how it deals with identity and relationships. Professor Martin's presentation dovetailed very well with James Cornford's talk the previous afternoon regarding 'customer focus' in e-Government.

The first part of Professor Martin's presentation gave a detailed description of the case of 'Mary' and her relationships with the national charity Barnardo's through SureStart (a drop-in family support Centre) and MOSAIC (a counselling service). The father of her child was also attending MOSAIC (in a relatively close but different geographical area) creating further issues relating to the need to keep Mary's data/identity separate and secure within different parts of the system. The complexity of Mary's case set the scene for discussion of identity and relationships, particularly within an information system (IS). Professor Martin noted that the typical private sector model, focusing on accountability and integration of the data, may not be helpful where separation of the various interactions Mary had with Barnardo's was paramount - a system is not the real world.

Drawing on the work of Charles Sanders Peirce, Professor Martin argued that relationship and identity management is frequently seen as a dyadic relationship between an individual and the system where data about the individual is stored (an 'object' and its 'attributes'). In this situation, the relationship and the access/control mechanisms are separate, and issues regarding identity/relationship are frequently resolved, simply, by putting in place more access and control mechanisms. He argues, however, that this dyadic model has limited value and that a more interesting, important and significant way of looking at relationships is to view them as *triadic*: with interactions between the individual, the system and, importantly, the owner of the system who determines the purpose of the system and its use.

Explicit governance and governance structures were seen as the key to these triadic relationships – not technology. Identity and relationship were seen as separate responsibilities and services, but in terms of operation were inextricably linked. Information systems are inherently reductionist in an attempt to 'keep it simple'. However, real life is more complex and individuals may have multiple identities and relationships, with information flowing from one encounter to another. In Professor Martin's view any system must be, at least, expressive enough to capture and keep separate (as appropriate) the complexity of Mary's relationships (for example) with the drop-in centre, her

counsellor, and her appearance in the records of the father of her child. Professor Martin concluded that the bottom line was to devise and enhance systems which “improve the quality of the mistakes we are making”. Although perfection is unlikely, avoiding making the same mistakes was vital.

### **e-Business maturity and regional development**

The fourth and final keynote presentation was given by Professor Paul Benyon-Davis based around the work of the E-Commerce Innovation Centre (eCIC) (Cardiff Business School, Cardiff University), where he is currently Director. His talk reflected on what he has learned about the nature of e-commerce/e-business as it affects the 99.5% of United Kingdom (UK) businesses who are small and medium-sized enterprises (SMEs).

E-business was seen as a socio-technical discipline spanning both technology and organisations, with the broad aim of improving the performance of organisations. Hence e-business is a practical and applied discipline. Professor Benyon-Davis noted that although, currently, Third Mission work (innovation, engagement with industry and knowledge transfer activities) is perhaps perceived by Universities as less of a priority than teaching and research - this is changing. The balance between the rigour and relevance of research may also be changing: rigorous research takes time, and in an evolving and dynamic field such as e-business greater time taken may erode the relevance. As the balance shifts towards relevance, the concept of what constitutes rigour may have to adapt.

According to Professor Benyon-Davis, the conventional wisdom is that greater adoption of information and communications technologies (ICTs) and electronic business (EB) yields increased business benefits in terms of, for example, competitiveness and the ability to be ‘locationally independent’ and compete in a global marketplace. However, he argued, the aggregate regional benefits of adopting ICTs/EB are hard to measure, as most businesses (SMEs and larger organisations) tend not to evaluate their ICT/EB investments.

The work of the eCIC could be characterised as relating to the information society, with the ‘e’ of e-business referring to technology’s embeddedness in everyday life. In counterpoint to this, Professor Benyon-Davis reminded the audience of the Digital Divide, whereby not everyone has access to online technologies, or the skills to use them. This impacts business strategy as e-business may not be appropriate for a particular demographic, if access and skills are limited.

A significant part of Professor Benyon-Davis’ presentation focused on the work of eCIC, which has provided e-business related support to SMEs in Wales. Results of the eCIC ‘State of the Nation’ annual survey(s) were presented, based on an e-commerce adoption ladder which SMEs ‘climb’ as their engagement with e-business and related technologies increases. Strengths and weaknesses of such ‘stages of growth’ models were identified, and the speaker gave the audience an insight into his current thinking on how theories of e-business, and the work of eCIC, could be enhanced in the future. Key themes included: the use of value networks for understanding, explaining and engaging with SMEs; conceptualising e-business as having both an internal and external focus, with the technology providing not only a vehicle for competition, but also cooperation and collaboration (Partner-to-Partner networks); and replacing the adoption ladder with a maturity assessment form/index. Professor Benyon-Davis concluded his presentation by describing a number of the issues facing the SME e-business area. For example, the tension between the need to support businesses at the *lower end* of the e-business adoption ladder, and funding bodies focusing their support on activity engaging with *advanced uses* of e-business technologies. Encouragement of strategic thinking and the related managerial skills could be crucial, and there is the ongoing challenge of encouraging organisations of all sizes to justify and evaluate more clearly their investments in ICTs/e-business.

This presentation raised a number of issues that need to be challenged e.g. is more mature adoption and investment in ICTs and E-Business always more beneficial to SMEs. If not, how should SMEs strategically evaluate which advances, technologies and applications would be most beneficial for them to embrace and which stage of the maturity assessment index they should strive to achieve.

### **The New Media Industries**

Joanna Berry led an interesting and wide ranging discussion based around the question: What are ‘new media industries’? The response to this question depended on how you framed the question itself. Social networking phenomena such as YouTube and MySpace could be considered ‘new media’ industries ie new media providing a break from the traditional industries of, for example, print and television. On the other hand, perhaps they are ‘new’ media industries, in other words simply the latest incarnation of existing media industries. Joanna guided the audience through the discussion, bringing to bear both her academic expertise, and a wealth of industry experience from her work as Communications Director for a London based record label.

A wide range of examples was discussed: the well known and popular YouTube and MySpace; Yahoo Answers, where questions posed can be answered by interested, and sometimes highly knowledgeable, members of the public; to less well known websites such as iStockPhoto (where the public can buy or sell their photographs online for a modest flat fee). Key examples were social networking/bookmarking sites such as digg and del.icio.us, where users can tag/vote on the material they find interesting.

A particular strand of the discussion was that it is no longer enough for content to be provided to consumers as passive recipients of 'the message'. Consumers are becoming more demanding and want to be involved in the co-creation of consumer content, where the act of creation is linked to the act of consumption, for example: viewing material on digg (consumption) and voting on what you have seen, thereby informing others who may hold similar interests (co-creation of 'best' content). To what extent, then, are these new media messages more, or less, or equal, in value to traditional media messages? And what are the implications for businesses - empowered consumers are happy consumers; happy consumers spend money. Do we require new theories to support our investigations and understanding of these phenomena? A range of views was expressed, and it is clear that there are significant, and exciting, research and business opportunities available through this blurring of boundaries between old and new media.

### **Emerging Technologies and Applications**

The theme of this discussion session was 'Emerging Technologies and Applications'. More generally, it provided the audience with a final chance for discussion, reflection and comment on the presentations and discussions across the two days of the event. To set the scene and prompt discussion the facilitator, Peter Duncan, asked the audience to consider three questions:

Firstly, what are the currently emerging technologies and applications (ie those currently 'arriving' or at least 'on the horizon')? Secondly, a more speculative view about what will be the emerging technologies and applications (ie those which are beyond/over the horizon at the moment)? Finally, the audience was asked to challenge any pro e-business or e-government bias they might have - are there any areas where e-business or e-government will not be relevant, or at best be a 'slow burner' in terms of development?

The example was given of the Funeral Services Sector in the United Kingdom, where some small scale research had found that for, in particular, sociological reasons - e-business may not, currently at least, be appropriate. This prompted some lively discussion relating to funeral planning, cardboard coffins, procurement within the industry as well as consumers, and the global sourcing of stone for monuments. More generally, points were made regarding cultural presuppositions assuming 'one size fits all' regarding e-business. For example 'Linn', who make top of the range sound systems, rely on potential customers hearing the actual system itself, rather than having the sound adulterated through, for example, a computer's soundcard. The pervasiveness of information and communications technologies in everyday business and life may be such that 'opting out' may be extremely difficult even if we were to try to.

A number of emerging technologies and applications were identified. Nano technology may lead to scanners and data being embedded in our bodies. Location was a theme. However, the transparency of Who does what where potentially brought about by technologies such as Radio Frequency Identification (RFID) or Global Positioning Systems (GPS) was seen to be a double-edged sword raising threats of 'big brother', and intrusion into our private lives. Tom Tom uses GPS as a navigation aid, whereas TravelEyes2 is designed to, potentially, be concealed to monitor the travel patterns of others, such as a "teenager's late night activity". Another example related to Smart Cards at one University Library, where the card could be used to plot your location within the library - bringing to mind the Marauder's Map in the Harry Potter books where Harry could 'see' Professor Dumbledore pacing in his study. In the non-magical 'Muggle' world, RFID could provide the backbone of a system whereby as a student left the library, any books taken out would (via an RFID tag/scanner) be logged against the student's account (determined via the Smart Card).

It may be that the 'E' in e-business and e-government could be electronic, but also stand for embedded, entrepreneur or even expectations (as in raising the expectations of consumers or citizens).

### **Summary & Conclusions**

Professor Li closed by highlighting how the workshop had clearly demonstrated that e-Business and e-Government is an exciting and rapidly evolving area. The field of e-business and e-government provides researchers and practitioners with many opportunities relating to both theory and practice. However, such a rapidly evolving field also presents serious challenges, relating to conducting research which is both rigorous and relevant and also in understanding what is actually going on in the world.



The workshop covered considerable ground, from the unchartered, emerging territories of MMORPGs and the potential business opportunities and social and ethical problems, to the extremely sophisticated conceptual, methodological and practical challenges in e-Government. The rapid development and proliferation of the Internet and related technologies in our society and economy has brought about radical changes in the way we work, play, communicate and learn, but we have probably barely scratched the surface of the phenomenon and more radical changes are yet to come.

Fundamental challenges remain and it is more relevant than ever to ask: what is e-Business or e-Government? More importantly, what can we do about it to ensure the benefits accrue to the generic public in a fair, transparent, and equal fashion between individuals, different segments of our society, as well as between cities, regions and nations; and emerging problems from privacy to online risks are adequately addressed. It is the mission of this SIG to promote focused research in this area and contribute to the development of theory, practice and policy in the increasingly networked, knowledge based economy.

Some video clips of the event are available at [http://www.ebusiness-newcastle.com/news/events/06\\_11\\_ebusiness.php](http://www.ebusiness-newcastle.com/news/events/06_11_ebusiness.php).

## **eBusiness Maturity and Regional Development**

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### ***Abstract***

This paper describes the experience of a major research centre supporting knowledge transfer in the area of eCommerce to SMEs. It debates with issues surrounding the integration of academic research with practical support to the SME community. For this purpose the use of an eBusiness framework as a platform for eBusiness maturity assessment is proposed. These devices are seen as key to the work of research centres such as ours in addressing the future challenges for smeeBusiness.

**Keywords:** ebusiness, maturity assessment, regional development

**Acknowledgements:** We wish to acknowledge funding support for the work described in this paper from the European Regional Development Fund under the Opportunity Wales programme. Note the opinions expressed in the paper are those of the author and not the Opportunity Wales programme.

## **1 INTRODUCTION**

The author is currently head of a research centre based within the Cardiff Business School. This research centre has built a substantial amount of experience in knowledge transfer work in the area of eCommerce with SMEs. As we come to the end of current project work in this area we have been evaluating our experience of this activity with the overall objective of formulating what we see to be the future of support in this area amongst the SME community in a regional context. This paper documents some of our initial thinking and has the following key aims:

- To discuss the relationship between eBusiness and regional development
- To consider some of the relationship between university Innovation and Engagement (third mission) work and the concept of eBusiness growth
- To highlight the importance of assessing the maturity of eBusiness amongst companies to the process of effective knowledge transfer
- To consider the meaning of maturity in the context of eBusiness
- To discuss whether eBusiness for SMEs is different from eBusiness generally
- To describe what we see to be the challenges for smeeBusiness over the next decade

## **2 REGIONAL DEVELOPMENT AND EBUSINESS**

Over the last decade much European, national and regional funding has been used to promote the adoption of ICT amongst SMEs (ECb 2002; ECa 2005). The rationale for making investment in this way is normally portrayed in the following terms. Greater adoption of ICT is seen to lead to clear business benefit such as greater business competitiveness. For example, ICT adoption is seen to facilitate the location independence of business while also permitting small business to access global as well as local markets. In other words, ICT adoption allows small business to 'level the playing field' with large business in many areas. In turn, since SMEs form the vast majority of businesses and SMEs are typically also seen as the growth agents within economies, overall investment in improving rates of ICT adoption amongst the SME community is seen as a major catalyst for regional development in terms of measures such as increased GDP and increased levels of employment .

Small and medium-sized enterprises (SMEs), defined as firms employing fewer than 250 people (ECc 2005), play a central role in the economy and are an essential source of employment, innovation, entrepreneurship and growth. In the UK as a whole, SMEs make up 99.9% of all enterprises and account for more than half (58.5%) of the private sector workforce and over half (51.3%) of UK turnover (SBSa 2005). In Wales small businesses also represent more than 99% of all businesses and are both socially and economically vital, accounting for approximately 60% of all Welsh private sector employment and over 40% of business turnover (SBSb 2004).

Typically the notion of ICT adoption has been bundled over the last decade amongst many European regions in terms of electronic commerce (eCommerce). More recently discourse in this area has expanded the notion of ICT adoption to that of electronic business (eBusiness).

Business can either be considered as an entity or as the set of activities associated with a commercial organisation. Electronic business or e-Business might be defined as the utilisation of information and communication technologies to support all the activities of business. Commerce constitutes the exchange of products and services between businesses, groups and individuals. Commerce or trade can hence be seen as one of the essential activities of any business. E-Commerce focuses on the use of ICT to enable the external activities and relationships of the business with individuals, groups and other businesses. The distinction between these two concepts will be elaborated further below and will be critical to the argument we wish to promote in relation to the future of knowledge transfer work as far as ICT is concerned in the future.

The problem with this association between ICT adoption, uptake of eCommerce or eBusiness, increased business competitiveness and better regional development is that it is difficult to measure linkage effects. Our experience tells us, for instance, that it is critically difficult to evaluate the impact of eCommerce at the regional level. A key problem is that companies (particularly SMEs) do not evaluate their ICT investments effectively. In other words, SMEs do not and frequently cannot systematically trace the impact that something like an investment in a customer web-site has for their business. To cite a more specific example, many small businesses within Wales cannot distinguish sales they have taken face-to-face, over the phone or through their web-site. It is therefore impossible for them to estimate something like their on-line revenue contribution (Beynon-Davies 2004). Without this it is difficult to estimate aggregate regional development impact, except in the sense of profiling

adopters against non-adopters as has been done under the *Opportunity Wales* programme which is discussed below.

### 3 INNOVATION AND ENGAGEMENT AND RESEARCH

Universities as organisations traditionally fulfil a number of different roles within the society, economy and polity of a country. At least as far as UK universities are concerned it is conventional to divide up the competences of a university in terms of three main areas of mission:

- The first mission of a UK university, particularly those within the top rank, is research which we might define very broadly as that activity devoted to the generation or production of new knowledge.
- Universities are traditionally seen as knowledge repositories, accrued through academic research but also through academic scholarship. The expectation is that universities must seek to transfer this knowledge in some way into the wider community. The normal route through which this occurs is through various forms of teaching to students. This is the second mission activity or competence of a university.
- The third mission of a university is now typically conceived in terms of innovation and engagement. There is a growing imperative both from government and industry for universities to be involved in both the transfer of knowledge to the wider world but also the engagement with this wider world in terms of ‘leveraging’ local economies, engaging with the broader society and helping to shape the actions of the polity.

However, there are difficult junctures between the 1st and 2nd missions of universities and 3rd mission work. For instance, because of the ways in which third mission work is both funded and operated it is particularly difficult to marry the demands of Innovation and Engagement work with good academic research. By good academic research we normally mean investigation which is both conducted and reported upon in a rigorous manner, the notion of rigour typically defined by the overarching academic discipline within which the research is conducted. In contrast, Innovation and Engagement work may be driven by alternative imperatives of timeliness and relevance.

A focus on eCommerce and eBusiness exacerbates some of these junctures. It is argued below that eBusiness is by its very nature a socio-technical phenomenon. By this we mean it exists at the interaction between technology and human activity. As such, it is by its nature inter-disciplinary. This frequently does not marry with the divisions of traditional academic structures. The area is also applied in the sense that it is interested in the practical application of technology. This leads to the problem of managing and disseminating the knowledge concerned with the application of a fast-changing technology. This means that what is relevant for business in terms of the application of ICT may have a relatively short time-frame (months) as compared to the typical time-frame of academic research (years).

### 4 ECOMMERCE INNOVATION CENTRE

The eCommerce Innovation Centre (eCIC) has been in existence for over 10 years as part of Cardiff University and more recently as part of the Cardiff Business School. The author has recently taken over as director of the centre. The expertise of the centre historically as its name suggests has been located primarily in the application of eCommerce amongst SMEs. With the new leadership this remit is expanding to include an interest in all matters concerned with organisational informatics (Beynon-Davies 2002). Organisational informatics is concerned particularly with the application of ICT to improve organisational performance. However, this does not mean that the focus of concern can and should stay merely within the organisational domain.

We would argue that by its very nature ICT is a systemic issue. In other words, ICT is embedded within modern society, economy and polity. Hence the issue of organisational performance is impacted upon by ICT developments in the wider environment. For example, concern has been continuously expressed over the issue of the digital divide. In broad terms this is the social phenomenon concerned with differential rates of awareness, interest, skills and access to ICT throughout society. This has and is likely to continue to have an effect on eBusiness. For instance, certain customer segments are more likely to be eLiterate and have the preference to shop for goods and services online than others. This is likely to help direct eBusiness strategy for many companies into the future. Also, aspects of the polity such as eGovernment, particularly in the area of eProcurement can be a significant lever for eBusiness (particularly amongst SMEs). With the drive for greater public sector efficiency many government

organisations will mandate online links with suppliers in the future for most of their procurement. This has particular implications for those SMEs which conduct a significant part of their trade with government.

eCIC is the site for three major projects currently:

- The *Broadband Wales Observatory* is an integral element of the five year, multi-million pound, Broadband Wales Programme. Launched in 2002, the programme is designed to improve the availability and take-up of broadband across Wales and, ultimately, to help underpin the achievement of economic development objectives. The aim of the Observatory is to track developments in the broadband marketplace and to identify best practice in relation to the roll-out and usage of high speed networks by individuals, businesses, industry sectors and public sector organisations.
- The *ePROC* project is a collaborative European project funded by INTERREG IIIB NWE with partners from Germany, Holland, Ireland and Wales. The aim of the project is to investigate the adoption of new procurement processes and tools by SMEs in more rural areas who might find themselves disadvantaged as a result of new eProcurement systems adopted by local authorities.
- eCIC acts as the centre of excellence for the *Opportunity Wales Programme (OW)*. We particularly focus on describing some of the features of the OW programme because of its relevance to the themes of this paper.

## **5 THE OPPORTUNITY WALES PROGRAMME**

The Opportunity Wales programme is funded under the European Regional Development fund and aims to provide SMEs with advice and support in achieving the benefits of eCommerce. This support programme has involved:

- the establishment of a process of knowledge transfer from eCIC through accredited eCommerce advisors to SMEs
- general awareness raising of eCommerce benefits to SMEs through intensive marketing campaigns
- the establishment of a contact centre to coordinate client relationship management, adviser activity and management information
- the development of a Web site to provide a 24/7 online resource on eCommerce knowledge and information
- advisor support to encourage SMEs to introduce and enhance the use of eCommerce and to assist them to implement solutions
- client aid for appropriate eCommerce products and services.

The OW programme is considered an exemplar regional support programme by the European Commission. This is particularly because it is structured as a public/sector partnership, has developed and uses a clear delivery methodology including quality assurance and uses benchmarking to continually evaluate performance.

As of April 2006 Opportunity Wales has supported over 10,000 businesses within the objective 1 and 2 areas of Wales. Benchmarking data has been collected from 5,899 clients showing substantial growth since April 2001 with 3,150 new jobs being created and an increase in turnover of £295m. There is also a nucleus of over 120 trained and University accredited advisors, capable of supporting SMEs in future eCommerce activities.

## **6 THE STATE OF ECOMMERCE IN WALES**

As part of the OW programme eCIC has conducted a large annual survey of the state of eCommerce adoption amongst SMEs in Wales (ECIC 2006). This survey, conducted since 2002 with over 2000 plus companies annually has used a variant of the original DTI adoption ladder to categorise companies' experience of eCommerce. This model describes the process of eCommerce adoption in terms of 7 key steps or stages represented in table 1.

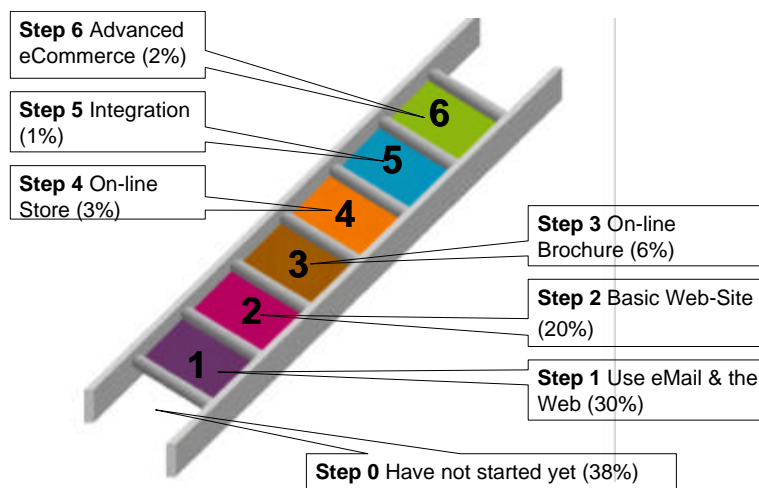
**Table 1: Stages of the eCommerce Adoption Ladder**

Stage	Title	Definition
0	Have not started yet	The business does not have Internet access
1	Use eMail and the Web	The business does not have a web-site but accesses information and services on the Web and uses eMail. This step can be further divided into businesses using eMail only but not surfing the Web.
2	Have a basic Web site	The business has its own web-site which only included very basic information about the business; for more information customers have to contact the business.
3	Have an on-line brochure	Customers can access more detailed information about products/services from the web-site but cannot buy or pay on-line.
4	Have an on-line store	Customers can buy and pay for products/services from the web-site, but the web-site is not linked to internal systems and orders are processed manually.
5	Have integrated systems	The on-line 'store' is integrated with other business systems, e.g., order processing, fulfilment, accounts and/or marketing.
6	Use advanced eCommerce	Internet technology drives the business internally and externally, and is used to manage all processes end-to-end more effectively and efficiently.

As part of the annual survey we have plotted eCommerce adoption within Wales against this ladder. The latest data we have for 2005/2006 (see figure 1) indicates that across Wales eCommerce adoption has particularly focused on the basic utilisation of eCommerce such as the use of web-sites for marketing purposes. The majority of SMEs in Wales are in steps 1 and 2 of the ladder. Some SMEs are beginning to build web-sites that offer ordering and fewer are offering on-line payment as an option. Fewer still businesses are moving into advanced forms of eCommerce technologies such as CRM and fewer still are exploiting the integration and innovation opportunities of ICT. Worryingly, a substantial amount of SMEs in Wales are on step 0; they do not yet have an internet connection.

This sets us the vision for the next level of challenge in Wales and we suspect most regions within the UK. We can demonstrate in comparing the profile of OW clients against the general population that some impact has been made with this support programme. The profile of OW clients is generally much better. In other words, they tend to be further up the ladder with the majority at steps 3 and 4. However, the challenge for the next level of Innovation and Engagement in this area is to marry the still relevant needs of the 'mass market' with the need to further progress companies that have started the process of innovation with ICT.

**Figure 1: The OW eCommerce Adoption Ladder and Adoption in Wales for 2005/2006**



## **7 WHAT DO WE MEAN BY EBUSINESS MATURITY?**

The eCommerce adoption ladder described in the previous section can be considered a very basic attempt to encapsulate the issue of eCommerce maturity. However, the ladder was developed as an Innovation and Engagement instrument, particularly for use as an explanatory tool with SMEs and as a tool for promoting the benefits of eCommerce to these companies. It was never intended as a research instrument and not surprisingly there are key problems with the ladder as an instrument in this sense.

First, the adoption ladder focuses on eCommerce and particularly B2C eCommerce to the detriment of other forms of eBusiness such as internal, B2B, C2C and P2P eBusiness (see below). Second, the definitions of the steps of the ladder are somewhat vague, particularly for steps 5 and 6. In practice, for instance, it is unclear what is meant by the definition used for step 6 - *the use of Internet technology to better manage end-to-end processes*. Third, in our SOTN survey companies have been asked in the past to place themselves against this framework. This introduces potential mis-measurement as respondents may over-rank themselves against the ladder.

Hence, we have been re-working our ideas both in terms of Innovation and Engagement and research work around a more sophisticated and hopefully more useful instrument. This instrument is grounded in an assessment of eBusiness maturity and specifically linked to a vision of how we envisage SME support in the future. In other words, we are attempting to delineate the major shape of what we might call smeeBusiness for the next five years or so.

## **8 VISION FOR SMEEBUSINESS**

As a centre, we see the vision for smeeBusiness as expressed in a series of succinct statements that form the essence of the message we feel needs to be promoted in the next generation of Innovation and Engagement work in this area.

### **Move from eCommerce to eBusiness**

eCommerce was the banner around which support work was built in the past. It must be acknowledged that eBusiness is now the more accepted term and is generally used as more encompassing term to include eCommerce within its domain. The term eBusiness emphasises both an external and internal focus. It also emphasises the use of technology both for competition and collaboration (Beynon-Davies 2004).

### **Next level of leverage will come from promoting eBusiness across the value-chain**

The value-chain concept has been much promoted and has come under some criticism from certain quarters. Nevertheless the value-chain idea is useful to emphasise that ICT is applicable across all business value-adding activities (supply-chain, internal value-chain, customer-chain and what we like to call the community chain). It will also become increasingly significant across partnership networks. Hence, the key assumption is that the next level of competitive advantage will come from integrating ICT systems across the value-network (see below).

### **Process innovation through application of a new range of technologies across the value-chain**

We would argue that the focus on organisational processes is the key to transition in the SME sector. The first generation of adoption of ICT has generally been to support existing processes (particularly through efficiency gain) or replace processes through automation. The second generation adoption of ICT will be to innovate new ways of doing things (new processes). For instance, a new range of technologies (such as CRM systems) allow the SME to process innovate in ways previously only available to the large company.

These three levers suggest a more encompassing model of ICT adoption amongst SMEs, an issue which will be elaborated upon in the next sections. In so doing, the paper will attempt to highlight some of the likely 'developments' in the area of smeeBusiness.

## **9 THE CONCEPT OF EBUSINESS**

To produce an effective eBusiness maturity assessment we need a clear conception of eBusiness - an eBusiness framework. Within our research centre we are in the process of developing such a framework based upon a distinct conception of eBusiness first elaborated in my textbook (Beynon-Davies 2004). This acts as what you might call an ideal-type of the eBusiness based around the platform of the value-chain concept.

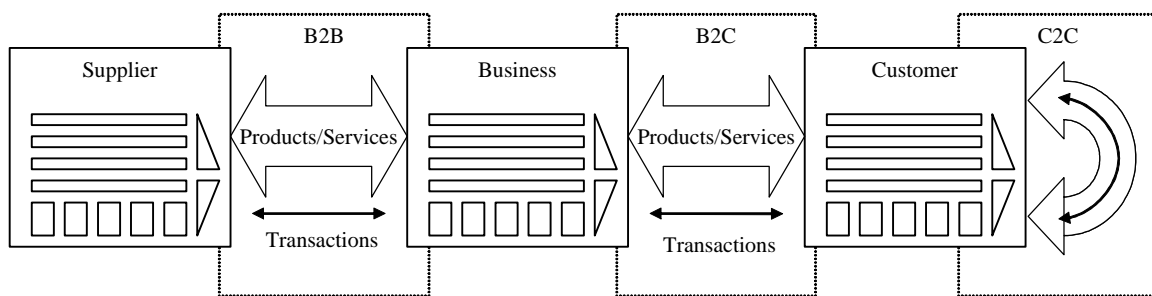
The framework is based in the conception of a business as a value-creating system based within a value-network. The original Porter value-chain model (Porter 1985) has proven useful as a generic

'business model' for understanding the place of ICT in the business. More recently the value-chain idea has progressed into the idea of the value-network (Kalakota and Robinson 1999). The value-network concept is useful as a means particularly of distinguishing between eCommerce and eBusiness. It also allows us to place some of the newer application areas for eBusiness in relation to some of the more established areas of eBusiness.

The traditional view of eCommerce mapped onto the value-network is expressed in figure 2. Here, eCommerce is conceived of as the use of ICT to support the external activities/relationships of business – 'trade' – with two major stakeholder groups: suppliers and customers.

Business to consumer e-Commerce is sometimes called sell-side e-Commerce and concerns the enablement of the customer chain with ICT. Customers or consumers will typically be individuals, sometimes other organisations. Business to business e-Commerce is sometimes called buy-side e-Commerce and involves supporting the supply chain with ICT. B2B commerce is clearly between organisational actors - public and/or private sector organisations.

**Figure 2: Forms of eCommerce**



C2C or Consumer to Consumer eCommerce also has a place within this model. C2C eCommerce is a developing form of eCommerce particularly and recently linked to 'new media' services. We would argue that this is potentially the most radical form of eCommerce since it overlaps with non-commercial activity in the area of community. C2C eCommerce therefore exists in the 'community' chain and a new range of business opportunities emerge within virtual networking as a phenomenon driving new levels of content and services.

However, the traditional interest in eCommerce has tended to devalue the importance of ICT to internal operations. We would argue that the notion of eBusiness resurrects this internal focus in that eBusiness is as much about internal operations as it is about external relationships. The model in figure 2 is also useful because it emphasises integration between the internal and external focus across the value-chain.

Figure 3 represents a more encompassing model of eBusiness which includes two areas of critical development (see figure 3).

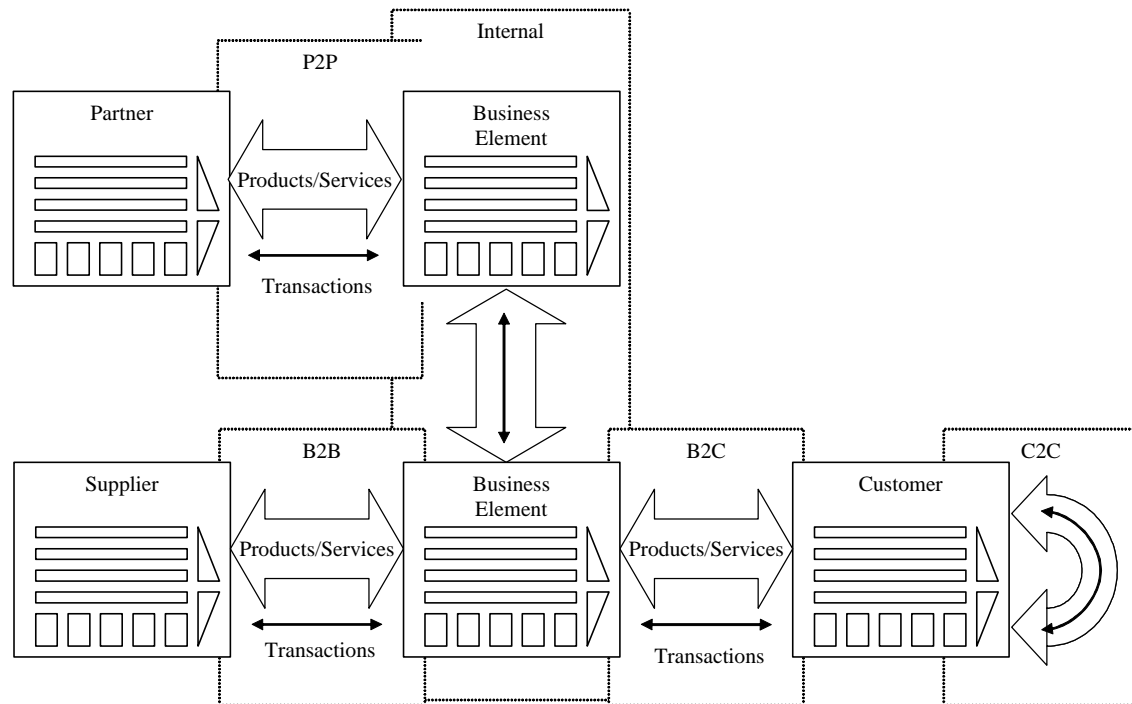
First, any contemporary model of eBusiness must address the range of critical issues associated with infrastructure issues in multi-part businesses spread geographically across the globe. The modern eBusiness is likely to be made up of numerous dispersed business elements some physically located, some mobile. A modern ICT infrastructure acts as a backbone to form the organisation.

Second any eBusiness framework must extend the notion of business cooperation and collaboration beyond that of the supply chain. Contemporary eBusiness is likely to be framed in a network of business partnerships of varying complexity. Hence, eBusiness involves cooperation as well as competition. Another business may actually fulfil a number of different roles in the business network at the same time – such as both a partner and a competitor. Some have referred to this phenomenon as cooptation.

At the level of technical infrastructure the idea of networks of business partners appears to have much in common with traditional notions of inter-organisational information systems (Barrette and Konsynski 1982). Facilitating partnership activity and information flow through common information systems or more generally through mutually enhancing electronic channels is critical to this phenomenon. However, it also seems to relate to the idea of building elements of a common informatics infrastructure for facilitating the value network.



**Figure 3: Modern eBusiness**



## 10 HOW DO WE OPERATIONALISE EBUSINESS MATURITY?

The eCommerce adoption ladder described in section 5 could be seen as a very simplistic stages of growth model for SME eCommerce.

In terms of the expressed deficiencies of this approach we want a model which embraces all the elements of eBusiness discussed in section 8. We also want to be able to assess a company's maturity in terms of such a model and believe that this constitutes a more sophisticated notion than traditional stages of growth ideas for ICT adoption.

Ideas of plotting stages of growth in relation to ICT adoption date back to at least the early paper of (Nolan 1990). A number of limitations are evident in such stages of growth models. First, they assume that companies adopt ICT and progress such adoption in a linear manner. Second, the assumption is that adoption is a uniform phenomenon; that one size of adoption fits all. In our experience both these assumptions are suspect in that they cannot deal with the complexity of the modern eBusiness.

However, we do believe in the benefits of maturity assessment. Maturity assessment is a well-used idea in other areas such as software process improvement. It is useful as a means of benchmarking individual companies against the general profile of adoption. It is also useful as a means of highlighting areas to input into strategy development.

We are aware of some but limited evidence of adoption of this idea, particularly within the Innovation and Engagement context. One of the most important examples include an early attempt to develop an eBusiness index at the DTI (DTI 2004). However, we have found little evidence of work which assesses the utilisation of this as a means both of managing research and for supporting/guiding Innovation and Engagement work.

## 11 WHAT DO WE MEAN BY AN EBUSINESS FRAMEWORK?

We see eBusiness maturity assessment as being formulated upon the platform of an eBusiness framework. By an eBusiness framework we mean an organised collection of key topics which help frame the eBusiness phenomenon. Our wish is to construct the framework in terms of what might be called knowledge packages – elements of ICT with a clear relevance to process innovation and linked to the idea of a value network. We expect the framework to be an active entity in the sense that we expect continuous revision of the framework to be required in order to reflect developments in technologies and processes.

As a research centre in eBusiness we want to use such an eBusiness framework as a tool for multiple purposes:

- As a mechanism for guiding and controlling the ongoing research of our research centre, particularly for suggesting research areas we need to develop
- To replace the eCommerce route map with eBusiness maturity assessment
- As a way of directing our knowledge transfer work in the sense of defining eBusiness knowledge of relevance to SMEs

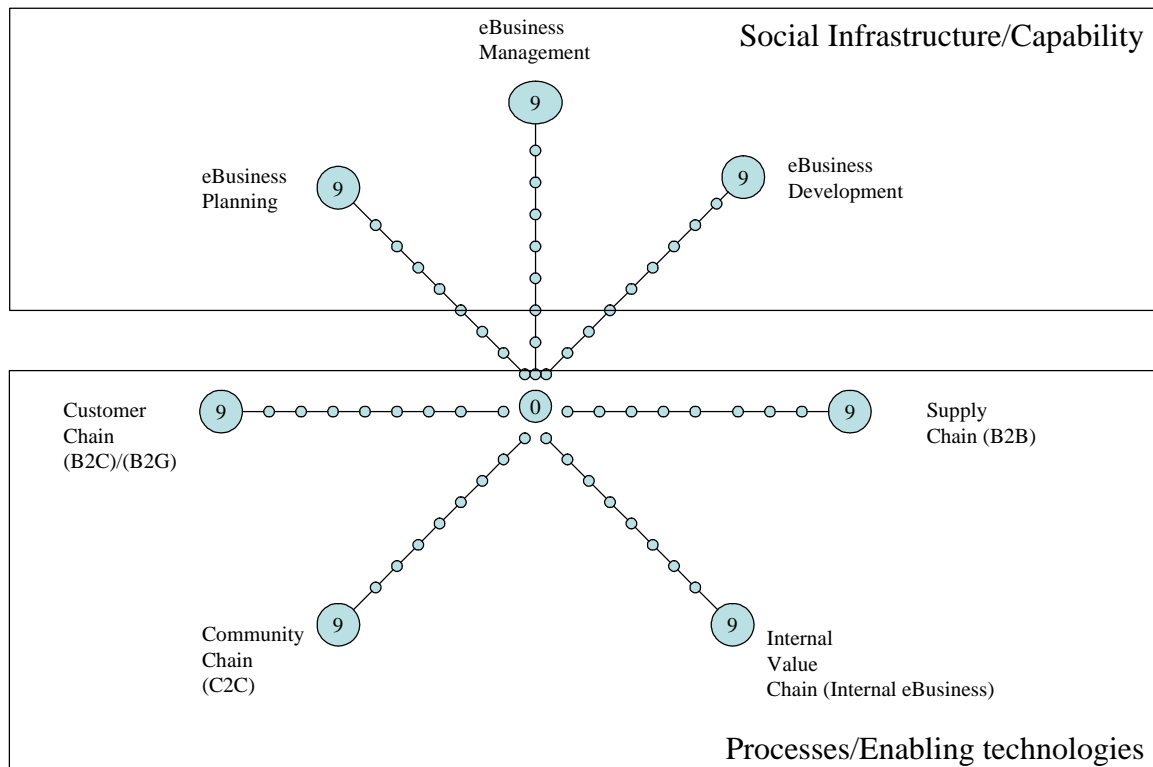
We are in the early stages of constructing such a framework. Some of our preliminary thinking is described here.

Since eBusiness is a socio-technical phenomenon any framework must cover both the social and technical. We intend use of a value-chain approach for key processes and technologies (the technical). However, it is also important to include aspects of social infrastructure (capability/the social). We are particularly interested in the capacity of a company to engage in strategic eBusiness thinking and innovate processes.

Clearly any effective framework needs to provide answers to questions such as: what is eBusiness? What is it composed of? What elements of eBusiness relate to what other elements?

We are of the opinion that at a high-level we need some hierarchical and possibly graphical representation of topics/knowledge packages. We have begun experimenting with the idea of using a hierarchical set of kiviati diagrams as a means of graphically representing the knowledge packages and their relationships. Figure 4 represents a top-level view of the prototype elements from the current eBusiness framework.

**Figure 4: A ‘prototype’ of the top-level elements of the eBusiness Framework**

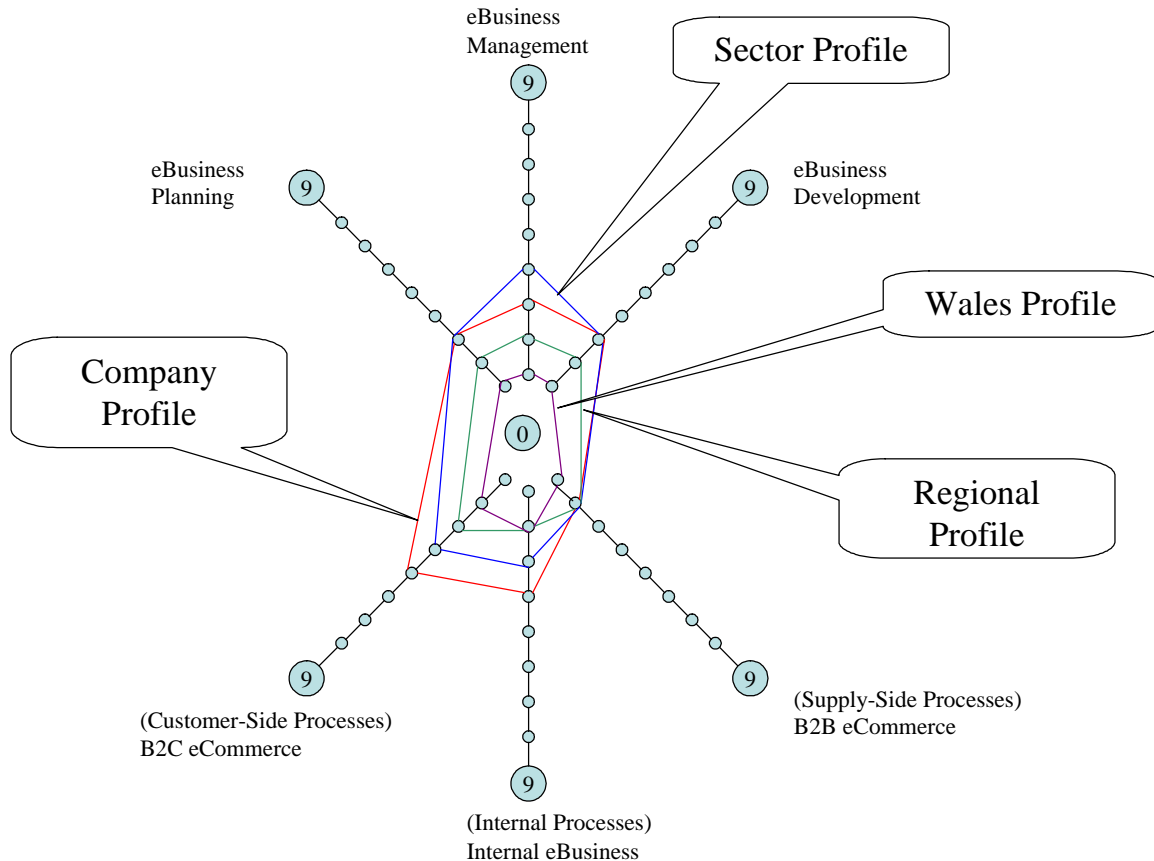


To turn the eBusiness framework into a maturity assessment tool we need some way of scoring a company’s experience against a particular knowledge package. In other words, for each dimension on any particular kiviati diagram we will need some way of translating a company’s experience of a technology/process mix into a score between 0 and 9. If this is feasible we may then aggregate ‘scores’ against topic areas. This will allow us to plot a profile for a particular company against the hierarchical set of kiviatis; the profile being represented by the area under each polygon formed on a kiviati.

Figure 5 illustrates profiling of a particular company against the top-level kiviati diagram from the framework. A visual comparison with an aggregate profile produced for the industrial sector within

which the company sits is illustrated. The diagram also presents an aggregate profile for the area of Wales in which the company does business and a gross aggregate profile for the whole of Welsh SMEs.

**Figure 5: Profiling against the framework**



## 12 CHALLENGES FOR SMEEBUSINESS

From an evaluation of our own work in this area we know that there are a number of key challenges to achieving the vision expressed in section 7 as far as the future of smeeBusiness is concerned. These include:

### **The inertia of adoption**

We know from our own research that the Opportunity Wales programme has skimmed the surface of adoption within Wales (10,000 out of a potential population of 90,000 SMEs in the region). We know from regular reviews we do of the sector that there is still a demand for and need for lower-level eBusiness support such as the basics of setting up an information web-site for companies. One of the key challenges for us is how do we marry this with a necessary wish to help the progressive companies grow further? How do we also marry this need with the wish to impart a greater/broader range of knowledge to the business community?

### **Segmentation of eBusiness**

One of the key criticisms of traditional stages of growth models whether for ICT in general or eBusiness in particular is that they assume that one shape of eBusiness is likely to fit all. Our feeling is that we will probably need different eBusiness models for different 'customer segments'. For instance, the relevance of certain knowledge packages is likely to vary depending on the size of business/business sector/age of business. Clearly we need to test to see whether the notion of maturity makes sense in such a context? For example, will the eBusiness model appropriate to the large company be relevant to the small company?

### **Managerial awareness and skills**

Our previous research within eCIC has identified a key lack of strategic thinking re. eBusiness opportunity amongst leaders and managers of SMEs in Wales (ECIC 2006). This is perhaps a reflection of the way in which ICT is treated generally by many businesses, as an adjunct to business strategy and particularly focused merely on operational improvement.

### **eBusiness and Growth**

Most of the companies we have dealt with do not evaluate their ICT investment. This makes it difficult for such companies to justify existing investment but more particularly it makes it difficult to demonstrate the potentiality in future eBusiness innovation. We feel that effective evaluation of ICT investment and the management of the benefits of ICT is critical to issues of growth in this area.

### **The technology/process mix**

Electronic Business as we have mentioned a number of times above is a socio-technical phenomenon. The upshot of this is that value may not come in exploiting the most advanced technologies within business. Value may emerge from utilising mainstream technologies innovatively. However, there is a key disjuncture here in that I & E organisations may experience difficulty in funding 'mainstream' technologies.

## **13 CONCLUSION**

At the start of this paper we set a number of objectives. In terms of the relationship between eBusiness and regional development, eCommerce has been seen as a major enabler of regional development in the past. We believe that eBusiness will be the next significant enabler within the SME sector over the next few years. University involvement in eBusiness support to SMEs is likely to be critical to success. But a balance has to be struck between the academic needs of rigorous research and the industrial need for relevant knowledge. As a centre, we have been starting work on using an eBusiness framework as a way of balancing the needs of research with that of knowledge transfer. Such a framework we feel is essential for also highlighting those aspects of eBusiness knowledge that are critical to particular segments of the SME sector. We further believe that building effective ways of assessing the maturity of SMEs in the eBusiness area is critical to achieving effective knowledge transfer. It is critical not only to helping us place companies currently but to highlight practical and effective strategies for innovation. These devices are means to help us meet the key challenge for smeeBusiness in the near future - to achieve a step-change in thinking. The sector needs to move from treating ICT as an add-on to an enabling and strategic technology for process innovation.

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## **The Value of Virtual Assets – The Role of Game Characters in MMOGs**

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### ***Abstract***

Game character, or avatar, acts as the nexus of virtual assets that the player collects and produces while exploring online game worlds. What is the value of this virtual identity in the online game community? Furthermore, what are the components of play that provide added-value to the players? The evolution of Massively Multiplayer Online Games (MMOGs) has been dramatic for the past 30 years. What has remained stable, however, is the role of game characters as the main channel for value growth and perception. In this paper, we apply game studies background in order to offer implications that would contribute to the field of business. By using the motivational framework with the game characters as focal point, we will point out the specific value structures that emerge in contemporary MMOGs.

**Keywords:** games, virtual worlds, virtual economies

## 1 INTRODUCTION

The seemingly virtual domains of massively multiplayer online games (MMOGs) have escaped the boundaries of cyberspace. Virtual economies, artificial currencies and intangible property are all inherent phenomena of contemporary virtual worlds that exist in the depths of the computer devices and networks. The likes of science fiction authors William Gibson (1984), with his *Cyberspace*, and Neal Stephenson (1992), who used the term *Metaverse*, have long ago predicted the future of networked online communities. While the society has perceived these as mere fictional playgrounds, the virtual worlds have slowly evolved to places and spaces of – at least – half-real assets.

There are numerous examples of cases that illustrate the shift and crossover between virtual and real. Making a profitable business by selling virtual property (Anshe Chung Studios 2006; BusinessWeek online 2006), running a ‘gold farmer’ company whose only aim is to collect and sell virtual resources (BBC News 2006; TheObserver 2005) and of course the wide spread auctioning of ones game characters (Washington Post Online 2005; BBC News 2005) are just but a few occurrences of future trends in economy. From the business point-of-view, these examples are far from the domain of ‘playgrounds for kids’. The money involved is real money and these people make a living out in the cyberspace.

In this article we discuss the evolution of MMOGs by analysing the value of virtual assets in these non-physical realms. Since the central role of game characters as virtual asset ‘warehouses’ is the key, we align our approach to character-oriented study. We tackle the question of what is the value of ones virtual identity in the online game community. Furthermore, we delineate the motivation components of play, in relation to the perceived net worth of different aspects of character value. We approach the topic from the field of game studies, but we focus on the implications that would contribute to the field of business.

Before venturing into the intricacies of virtual assets, it is necessary to offer a rationale behind the evolution and success of MMOGs. We will start by defining the concept of MMOGs by outlining the most distinctive characteristics of these virtual worlds.

## 2 FEATURES OF MMOGS

MMOGs belong to a distinctive field of virtual worlds which are neither plain chat rooms nor traditional video games. Although MMOGs generally possess qualities and features from both of the aforementioned ‘sisters’, they have many properties that are unique in the domain of online systems and services.

According to Bartle (2003, 4), most of the MMOGs adhere to certain conventions that distinguish them from other virtual spaces. Table 1 outlines the most important of these conventions and describes the potential business implications of each of these.

**Table 1: The conventions of MMOGs.**

<b>MMOG Convention</b>	<b>Potential Business Implication</b>
The world has underlying, automated rules that enable players to effect changes to it.	There is a more or less dynamic physics model that allows, for example, construction of buildings, harvesting of resources, or other manipulation of the surrounding objects.  → <i>construction of virtual goods, value-chain structures</i>
Players represent individuals in the world. This is their character and all interaction with the world and other players is channelled through characters.	The player has a proxy in the form of game character, which is the main instrument and interface for interacting with other players. Usually, only one acting character at any point of time is allowed, although the players may alternate among several.  → <i>virtual identity, trust catalyst, transaction platform</i>
Interaction with the world takes place in real time. When you do something in the world, you can expect feedback almost immediately.	The MMOGs operate like simulations of artificial worlds where majority of the activity is executed by human participants who all add to the emergent nature of the system.  → <i>consumers-producers, diverse motivations and needs</i>

<p>The world is shared, so there are other participants that act and play in the virtual world.</p>	<p>‘Massively multiplayer’ means that the online games can have hundreds, or even thousands, of simultaneous players. The large number of users generally create interesting potential for virtual – and real – economies.</p> <p>→ <i>markets, communities and trends</i></p>
<p>The world is at least to some degree persistent, i.e., constantly up and running.</p>	<p>Since the MMOGs are usually persistent virtual worlds that stay on even if the player is not logged in, the worlds evolve and other players continue their activities 24/7 – there is no downtime, except during the maintenance breaks.</p> <p>→ <i>long-term value, ‘stable’ investments, constant processes</i></p>

### 3 A BRIEF HISTORY OF MMOGS

While the history of MMOGs is by far too rich to be exhaustively discussed in this paper, we will provide a brief outline of the most influential developments by bridging the key issues with the potentially important implications for virtual and real economies. Figure 1 illustrates some of the key MMOGs that emerged during this 30-year period. The history of MMOGs starts in the late 70s with systems that hardly resemble the contemporary multimedia spectacles available on the today’s Internet.

**Figure 1: Development of MMOGs from MUD to World of Warcraft and Second Life.**



#### MUDs – Multi-user Dungeons

The first multi-user dungeon, or *MUD1* as it was later dubbed, was programmed on a computer mainframe at Essex University, England, in the fall of 1978 by Roy Trubshaw. His work was then continued by Richard Bartle. The inspiration behind MUD came from single-player adventure games, like Crowther and Woods’ *ADVENT* and Anderson, Blank, Daniels and Lebling’s *ZORK*. (Bartle 2003, 5). The MMOG phenomenon, therefore, can be said to have started almost 30 years ago.

As an interesting side note about the evolution of MMOGs, the original text-based MUD (*MUD1*) had no formal currency whatsoever. Although the idea of putting money into MUD1 was suggested many times by its players, the designer resisted because of the fear of inflation in the virtual world. (Bartle 2003, 299). Had this tendency continued, the world of MMOGs would be quite different today.

From the 1985 onwards many of the MUDs went on to achieve commercial success as part of early online services. However, most of the evolution of these text-based virtual worlds occurred within the academic domains of universities. This spawned MUDs like *AberMUD*, *TinyMUD*, *LPMUD* and *DikuMUD* (Bartle 2003, 9). Of all these examples, it was *TinyMUD* that laid down a track that still has important consequences. Since *TinyMUD* was not actually a game, the players spent most of their time creating things and talking about their creations (Bartle 2003, 9). Naturally, all of these were textual representations stored within the memory banks of the computer network. Regardless of the media, the self-created virtual assets were valued as one of the most significant artefacts in the online domains. The likes of *Second Life* (Linden Lab, 2007) follow this path even today.

Finally, the big bang of virtual worlds emerged in the form of *LPMUD*. The author Lars Pensjö, having played both *AberMUD* and *TinyMUD*, decided to write his own game with the adventure of the former and the user extensibility of the latter. He developed an in-game programming language LPC that allowed players of sufficient experience to add not only objects, but also powerful functionality to the game as it ran. (Bartle 2003, 10). The era of user-created game content had begun.



### **Dawn of Graphical MMOGs**

Although there are early examples of graphical MMOGs like *Oubliette* (1977), *Avatar* (1979 on PLATO), *NeverWinter Nights* (1991 on AOL) and *Shadows of Yserbius* (1992 on ImagiNation Network), the biggest impact was made by *Ultima Online* (1997) with its 100000 subscribers by the end of the first year of operations. From the start, *Ultima Online* was conceived to be a richer and deeper virtual world than a typical MUD, with an emphasis on community building, player-driven action, and the ability to accommodate different playing styles. (Bartle 2003, 17-22).

The innovative nature of *Ultima Online*, however, caused some interesting problems. For example, the means by which players were punished for attacking each other's characters was not effective. Furthermore, the detailed ecological model employed broke down when players rapidly killed everything that moved and, thus, the economy collapsed after a bug led to hyper-inflation. (Bartle 2003, 22). Nevertheless, *Ultima Online* was the benchmark MMOG for several years before its rivals could catch up.

While *Ultima Online* was a commercial success, the same cannot be said about *Meridian59* (1996). Launched a year ahead of *Ultima Online*, *Meridian59* was the first graphical virtual world, since the days of *Avatar*, to employ a first-person point-of-view. The reasons behind the failure of *Meridian59* are numerous, but the main reason for its only modest success was that it came to market a touch too soon. This, however, was not the case with *EverQuest* (1999). (Bartle 2003, 23-25).

### **Among the Big Ones**

*EverQuest* was exactly in the right place at the right time. It was basically a *DikuMUD* with a graphical front-end (client) bolted on. But, on the contrary of its competitors, *EverQuest* was able to reach the critical mass of players. Actually, *EverQuest* was so successful that within two years of its launch, over a hundred of graphical virtual worlds had been announced as being in development. These include the likes of *Asheron's Call* (1999), *Anarchy Online* (2001), *Dark Age of Camelot* (2001), *Sims Online* (2002), *Star Wars Galaxies* (2002) and *Asheron's Call 2* (2002)

Outside the published success of the western MMOGs, there have been others that are even bigger in terms of number of subscribers and revenue collected. The first place would clearly go to *Lineage*, which was published in 1998 by NCSOFT in Korea. Being a year ahead of *EverQuest* makes *Lineage* as one of the pioneering successes. Unfortunately, the 2001 launch in US did not produce as successful subscription rates, hence the western world seems to have ignored the massive number of customers *Lineage* was able to attract. (Mulligan & Patrovsky 2003, 327).

With all the preceding success stories and quiet failures, there is one MMOG that has risen above everything else. *World of Warcraft* (Blizzard Entertainment 2007), with its claimed 8+ million subscribers, dominates the field of virtual game worlds. What seems to be even more significant is the fact that *World of Warcraft* has been able to break the East-West boundaries of MMOGs. Naturally, all this means tough times for potential competitors. The sheer mass of players brings the impact and complexity of a virtual economy to a totally new level.

Finally, the recent years have witnessed another track on virtual worlds that essentially draw upon the likes of *TinyMUD*. The over 2 million registered users and numerous real businesses with virtual branches have made Linden Lab's *Second Life* (2007) as a truly interesting phenomenon. While gaming is not the main focus here, the modifiability and possibility to bring in your personal content have captivated the dwellers of virtual worlds. The free basic entry policy guarantees the influx of new members and, hence, attracts the businesses that produce added value. Being together is the key - with more users there are more possibilities for business and pleasure.

## **4 PLAYING TOGETHER IN MMOGS**

Playing together is inherent to both animals and humans. Multiplayer games are by no means a new innovation. Football, ice hockey and numerous other games cater for multiple simultaneous players who jointly participate in creating the overall game experience. Playing together is as old as games themselves - people (and animals) have shared the play experience with their peers since the dawn of existence. There definitely is social function involved with games. To quote the words of Roger Caillois: "Play is not merely an individual pastime. It may not even be that as frequently as is supposed." (1961, 37) Actually, one of the seminal accounts on playful culture, discussed by Johan Huizinga (1950, 1), starts by illustrating the young puppies playing together and experiencing tremendous fun and enjoyment while doing so. Being together is more fun than being alone.

This pull towards social play activity can be seen as one of the driving forces behind the evolution of multiplayer online game worlds. As commented by Csikszentmihalyi (2002, 168), almost every activity is more enjoyable with other person around, and less so when one does it alone. People seem to

be more happy, alert, and cheerful if there are others present, compared to how they feel alone. Based on this, it has been only a matter of time – and technological development – before the social togetherness transferred into the domain of virtual worlds.

If the digital game is played together with other people, the social interplay is enhanced by numerous traditions that are inherent in the interactions of physical world. The greatest advantage of these multiplayer games is that they transform computer games into truly social experiences. The social bonding can be so strong that it becomes one of the most important motivating factors for people to play games (Rouse 2000). Furthermore, the social presence of other human beings demands additional skills from the players. In most of the multi-player games, social skills are needed, or must be developed in order to succeed (Aarseth 2001). All these skills and actions need a platform where they are projected from. This is where the avatars, or game characters, come into the picture.

## 5 GAME CHARACTER AS A PROXY FOR INTERACTION

The main difference between virtual worlds and the physical one is the need for avatar, or game character, to act as a representation of your physical self. The character is player's representative in the game world and can generally take any form, shape, or a specific perspective (Friedl 2003, 172). Since this avatar is the proxy for most of the actions you do in the virtual world, without it you are nothing in MMOG – you do not exist and, hence, there is no value to be calculated. Without a character the player is just an invisible spectator who has no say in the happenings of the virtual world. The importance of game character originates from the early pen'n'paper role-playing games (e.g., Gygax & Arneson 1974) where your main aim was to execute adventurous quests and develop the stats of your character while doing so. The game character became a tool for player's actions. The role-playing, fighting, micro-management and all the other actions were channelled through game character.

Furthermore, a game character in MMOGs is also one's interface to other human players (Friedl 2003, 173). Game characters are constantly read and interpreted. The expressions and movements, performed by the players, are communicated through the characters into the game world. Players adjust their behaviour and decide their responses based on the cues they read from other characters. Moreover, besides being an interface between individual players or the player and the game world, player can form a relationship directly with the character. By giving the character a sense of personality, unique behaviour, intentions, and style, a player starts to form a relationship with the character. The player starts to understand the game character as a second self, as something to protect and worry about, as one's role in the virtual game world. (Friedl 2003, 185).

While the game worlds consist of other objects than just a collection of game characters, many of the actions revolve around these virtual proxies. There may be a possibility to buy a house (a home for the game character), collect better armour and weapons (protection for the game character), or just chat with your fellow players (words projected out of the game character). The game character, hence, is the focal point of all these virtual realms. While the games have evolved during the past 30 years, the importance of the avatars has remained.

## 6 ASPECTS OF GAME CHARACTER VALUE

Since game characters play essential part when participating in game activities, we will examine the elements that constitute a character's value to the player. As a framework for different character value components, we use Yee's (2006) categorisation for motivations of play in online games. Yee's model is formed through factor analytic approach utilising survey data collected from 3000 players on several different MMOGs (e.g. *EverQuest*, *Dark Age of Camelot*, *Ultima Online*, and *Star Wars Galaxies*). Yee (2006) divides motivations of play into three main categories: *achievement*, *social* and *immersion*. These categories are further divided into subcategories that depict the nature of each category in more detail (see Table 2). In our examination, we use the main categories to structure the discussion and point out examples that relate to the subcategories.

**Table 2: Motivations of play in online games (Yee 2006, 774)**

<b>Achievement</b>	<b>Social</b>	<b>Immersion</b>
<b>Advancement</b> Progress, Power, Accumulation, Status	<b>Socializing</b> Casual Chat, Helping Others, Making Friends	<b>Discovery</b> Exploration, Lore, Finding Hidden Things
<b>Mechanics</b> Numbers, Optimization, Templating, Analysis	<b>Relationship</b> Personal, Self-Disclosure, Find and Give Support	<b>Role-Playing</b> Story Line, Character History, Roles, Fantasy
<b>Competition</b> Challenging Others, Provocation, Domination	<b>Teamwork</b> Collaboration, Groups, Group Achievements	<b>Customization</b> Appearances, Accessories, Style, Color Schemes
		<b>Escapism</b> Relax, Escape from RL, Avoid RL Problems

## 7 ACHIEVEMENT VALUE OF A CHARACTER

Salen and Zimmerman (2004, 80) define game as “a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.” Even though they criticise role-playing games having no final end game (i.e., final quantifiable outcome), they agree that session-to-session missions, or quests, may have quantifiable outcomes. Besides the quests, character development, as part of the game, has stages that can be seen as quantifiable outcomes. In MMOG, a player needs to invest time in learning how to play the character. Especially in the case of role-playing games, the player needs to invest time in improving the character’s skills. Creating competent enough character for the challenging quests is a long and time consuming process. In the beginning, characters have only modest skill levels which need to be trained. Completing quests or missions, slaying beasts, crafting artefacts, or harvesting minerals gain experience points that, at times, result in levelling up. This means that the game character gains an amount of numerical points that the player can use to increase different skills the character possesses (e.g. weapon handling, healing, or magical abilities). In this manner the character advances periodically towards the chosen direction (e.g., becomes more skilful warrior, thief, bard or monk).

Completion of the quests and levelling up the character statistics (i.e., the quantifiable outcomes) are clearly achievements for the player who controls the character. According to Yee (2006), achievement is one of the thriving forces for playing an online game. Players get satisfaction from advancing, competing, and being self sufficient in the game. Players enjoy becoming better in achieving the chosen objectives and excelling over each other. From the business point-of-view, this indicates the potential of development structures that allow the players to increase the value of their virtual assets in concrete.

Achievement value of the character can, therefore, be seen as covering two main aspects: 1) the elements that constitute to the overall numerical competence of the character in the game world, and 2) the status achieved either through social dealings or through excellence in competing with other players or mighty non-player opponents. Elements constituting to the overall numerical competence of the character are the artefacts and wealth the player acquires for the character (such as weapons, armour, potions, gold, and even virtual property), as well as the improvements in the character’s skilfulness (i.e., the character statistics). Artefacts and wealth can be collected by completing quests and executing other gameplay activities. The second aspect regarding the value of the status is harder to measure. However, it sums up in the admiration the player, or her character, receives from her fellow players. The greater the legend you become amongst your online friends, the better the feeling.

## 8 SOCIAL VALUE OF A CHARACTER

Most of the MMOGs cater for activities other than pure gameplay. This provides players a possibility to select goals of their personal liking, or to simply hang around in the game environment. The freedom allows players to share their experiences about the game but also strengthens the possibilities for the emergence of more permanent play-communities. As Huizinga (1955, 12) argues: “A play-community generally tends to become permanent even after the game is over. Of course, not

*every game [...] leads to the founding of a club. But the feeling of being “apart together” in an exceptional situation, of sharing something important, of mutually withdrawing from the rest of the world and rejecting the usual norms, retains its magic beyond the duration of the individual game.*“ In the case of MMOGs, players may follow the built-in game structure, but they may as well choose their own game independent elements such as exploring the game world or taking part in social activities. Therefore, character’s value is not only about how competent it has become game-wise, but also about the areas of social connections and experiences built during and after the gameplay.

Many of the quests in MMOGs are built to encourage teamwork. It is often really hard, or even impossible, to complete certain quests without teaming-up with a properly formed group (i.e., the group that has game characters with complementing skills) (Jakobsson & Taylor 2003, 83). Since the death of a game character often results in the loss of experience points and other virtual assets, the players generally feel the need to trust in each other. Your character’s life is partly in the hands of your team players. If you do not manage to communicate properly, or, if your group members decide to flee and leave you in the midst of the raging battle, your character is most likely to die. After playing several quests within a same group, or after taking part in guild activities, the player and her character start to gain reputation. Some of the players/characters are known as trouble makers while others are known of their just behaviour and/or good playing skills (Jakobsson & Taylor 2003, 85-87).

Social value of the game character concerns aspects related to other players. The value can be considered from at least two perspectives: 1) meaningful social interaction with other players, and 2) the image of the player formed in the eyes of fellow players. The social value is, therefore, a resource for being able to form meaningful connections that, at their basic level, provide a possibility for casual communication and teamwork. On a deeper level the casual connections can turn into friendships, or even romantic relationships, in which the social value may well exceed the boundaries of a mere game. From the business point-of-view, the strong bonding of players offers interesting possibilities, for example, in the form of community services, trust-brokers, transaction mechanisms and reputation ladders. Many of the conventions of real world commerce apply to the MMOG societies. However, the ambiguous implementation of aspects, such as, identity, contracts and social-components of transaction procedures, makes it challenging to integrate traditional business models within the online games.

Finally, the image of the player comes into the picture especially in the organised forms of social play, such as, guilds and other consistent groups. It is not necessarily the other players that form the addictive component, but the image one gets of oneself from other players (Ducheneaut et al. 2006, 413). Furthermore, in guild activities concepts such as *trust* and *reputation* become essential as part of the player image (Jakobsson & Taylor 2003, 85-87). Some of the guilds require a certain amount of playing hours or certain percentage of attendance in guild activities, such as, meetings and raids. If you are willing to live up to your *responsibilities*, you may advance in the guild. If you fail to meet the requirements, you may be kicked out. Letting someone else to play your character could, therefore, potentially result in tremendous consequences.

## 9 IMMERSIVE VALUE OF A CHARACTER

Immersion into the MMOG can be achieved through many different elements. Yee’s (2006) subcategories list elements, such as, discovery, role-playing, customisation and escapism. When considering immersion from the game character point-of-view it is obvious that some elements are more essential than others. What is elemental, however, is the need for the player to be able to identify with the game character. Sociologist Gary Alan Fine (1983, 214-215) discusses the importance of identifying with the character and comments that *“players must invest their character with meaning. [...] For identification, the character must have attributes that permit a player to esteem that persona.”* Quite similarly, but from a bit different point-of-view, Friedl (2003, 185) argues that *“if a player has the possibility to give this avatar a sense of personality and contribute his unique behaviour, intentions, and style to the game world, he will establish an individual relationship with the character.”*

MMOGs commonly provide game characters that have attributes such as distinctive appearance, changeable clothing, as well as, armour and weaponry that indicate the desired playing style. Furthermore, interaction with other players and the game world, through the game character, offers possibilities to develop and share a unique personality, story lines and character’s history. This type of interaction enables the role-playing of the character. The role-playing may be about constructing and representing a fictive persona, or just an experimentation of the selected parts of players actual self (cf. Turkle 1999, 643-644). However, the persona of the game character does not form immediately. When playing a character for a long time, the player starts to identify with it and begins to feel what the character “feels” (Fine 1983, 217).

Based on the aforementioned theories, immersive value of the character deals with aspects that build up an image of the character and make establishment of individual relationship possible. A player may not be actively trying to role-play the character, but through discovering the world, taking part in quests, and socialising with other players, an image of the character starts to emerge. This image can be further altered through customisation of appearance and style of the character. Player invests her time and shares memorable adventures with her game character. If the player also empathises with the game character, it is possible to immerse into the character, as well as, to the world - through the character. The investment of time and the empathic approach to the character may also result in player wanting to think back the events shared with, and the qualities built for, the character. In this way the character gains sentimental value.

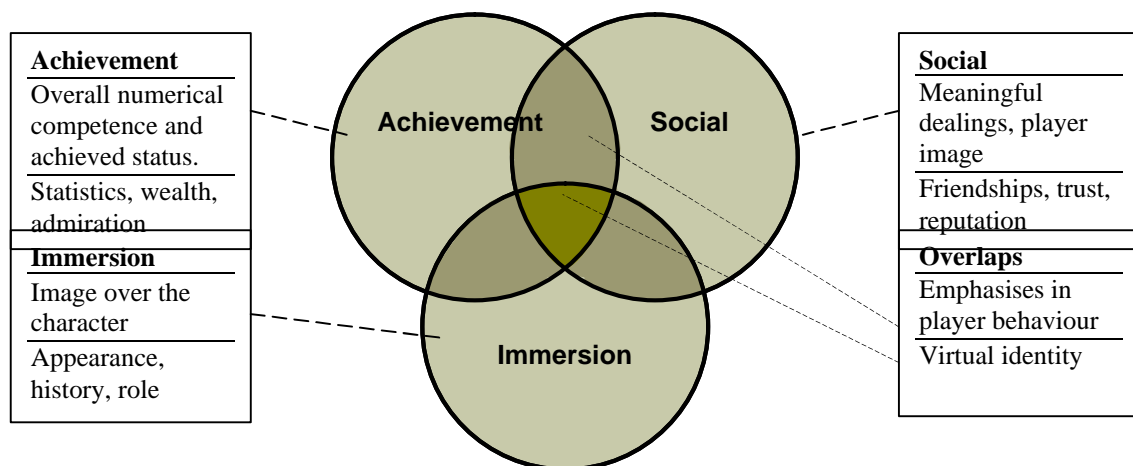
The immersion aspect of character value has mainly been ignored by the business applications. Although the games provide a platform for player immersion, there are no mechanisms that would directly support, or even increase, the construction of added-value. Personal records, virtual scrapbooks and other fan sites indicate the need of the players to both share and store their game experiences. User created content, in this form, could be integrated to the commercial game systems since the role of the content is mainly that of supporting to the overall gameplay experience.

## 10 OVERLAPPING VALUE ELEMENTS

Even though players may have clearly dominating motivations to play, it is common that the overall motivation arches over multiple elements from different subcategories (compare Yee, 2006). Most of the MMOGs have been built in a manner that requires most of the motivations to be pursued, at least to some extent, if the player wants to advance in the game. For example, it is hard to explore the world (immersion) without developing your character (achievement), since some areas have so powerful foes that the low-level character would not be able to survive. Similarly, as already noted earlier, many of the quests are built to encourage teamwork, hence character development and social communication are equally important. The overall value of the character cannot, thus, be measured by only basing it on a single value component.

The overall value of the character can be seen as a sum of the achievement, social and immersive components (see Figure 2). Depending on the case, one or more value components will be emphasised. By using this model, the game activities and player preferences can be analysed and their effects on the gaming community with potential business implications can be considered. For example, a player may dislike levelling up the character, but because of the immersive and/or social motivations he needs to pursue the achievement element. In this case, she might want to get a higher level game character without needing to go through the tedious achievement process. These types of opportunities can, however, have reflections on how other value components are viewed. The value of the character becomes evident only through the individual relationship formed via interaction between the player and her game character.

**Figure 2: Different value components overlap and sum up as the overall value.**



The relationship between a player and her game character forms during a period of time that can, for many players, be rather substantial. The players will generally go through most of the motivational forces - at least to try these out. Some parts of the game character may be more or less trivial for the player, but can nevertheless contribute to the overall image of the character. A player may, for example, purchase some additional levels for her game character, but this does not necessarily mean that the character's identity becomes different. It is the overall time the player invests in different value components that matters to the player. The interaction between the player and the character creates a *role* which becomes the *virtual identity* the player assumes while present in the game world. It is this virtual identity that holds the value of the game character in the online game worlds.

## 11 EXAMPLES OF VALUE PERCEPTION AND CONSTRUCTION

In this Section, we illustrate a series of empirical cases that offer insight into the various value constructing examples evident in MMOGs. The examples are organised according to the aforementioned player motivation model and each of the cases illustrate different approaches to perceived value of a game character.

### Achievement Value

Achievements can generally be seen in the character. Level 60 character looks a lot different than level 10 character. High-level character's armour and weapons have become bigger and/or more fanciful. Experienced character possesses items that low-level characters have not even heard of. Veteran character has guts to attack powerful foes and it can spread tremendous damage. The progress made in game, thus, affects many of the aspects of the game characters. But what is the worth of all the experience levels? Basically everyone can reach high levels. MMOGs do not ask that much skill for playing. On the contrary, they are rather easy to play but ask a lot of time and patience - at least if concentrating on improving character statistics to high levels. This has made character, experience level, and item sales possible. Companies such as *Gamepal.com* buy and sell characters, levels, gold and other valuables that can be used in the game. The service includes many of the existing MMOGs, such as *World of Warcraft*, *Everquest 2* and *Star Wars Galaxies*. For example, a general price for a *World of Warcraft* account having 50-60 level character is ranging between \$200 to \$400 and power levelling of one's existing character costs about \$20 to \$300 depending on wanted levels. In this way, if a player finds levelling a tedious task, she can cut down the character development time and make a shortcut to the activities requiring higher character level.

The nature of achievement value cannot be measured only in selling or buying of ready made characters and levels. Value is also related to the advancement of the character itself. A player may receive sheer joy from the advancement as in: "*It gives me the illusion of progress, I know that. I hate the level of frustrated progress in the r/w so I play the game and lvl up instead. It is \*crack\* for the achievement center of the brain, like cocaine affects the pleasure center.*" [M, 34] (Yee, 2005). Advancement is, however, also used to gain recognition from other players as clearly illustrated in: "*I basically play these games to become the most powerful force the game can allow. I want the best of the best items and people to truly respect my play style. I want to become a legend among players within the virtual mmorpg world!*" [M, 25] (Yee, 2005). But what happens to the value of the character when the player buys it from a shop instead of investing all her time in fine-tuning the character stats? Is the player still proud of her character? Or, more importantly, is the player having fun?

The boundaries between play and work seem to be immediately demolished when one thinks about the value of achievement. If the player decides to invest her time in advancing her game character, there is a great chance of playing turning into work. Or, as stated by a competitive player: "*My desire to stay competitive drives me to want to level fast, min-max, and gain rare drops. Those things in themselves aren't important to me, and I'd really rather it weren't important to the game, but if I intend to be competitive I've got to do the work to have the fun.*" [M, 19] (Yee, 2005). The value of achievement, in this case, is so high that the player is voluntarily 'working' in order to reap the rewards in the form of occasional fun - and all of this in-game. Naturally, he could just purchase the laborious parts of the resource-gathering and invest his time on the more *ludic* activities. Value, as in all of these cases, is in the eye of the beholder.

### Social Value

Players in MMOGs approach in-game relationships differently. Some regard them as being superficial while others value them similar to real life relationships (Yee, 2003a). The approach a player takes on the game will have an effect on relationship forming. One player comments the issue of

meaningful relationships in MMOGs as follows: “I’ve made many friends in games who become outside-of-game friends because we have a lot in common, same maturity level, looking for the same things in a friendship, and just click. I would call these very meaningful. But I also have many friends in games who are just sort of there to pass the time while I play... they’re silly and fun to chat with... but I’d never want to deal with them outside of the game. Those relationships I would label as superficial” [F, 22] (Yee, 2003a). According to the questionnaires collected by Yee in Daedalus Project (2003a), it is common to form lasting online friendships. The results reveal that 40% of the players feel that their online friends are comparable - or better - than their real life friends. This clearly suggests that the social role assumed in the virtual community adds immensely to the overall value of the game character. Many players have made good friends and some even got romantically involved through online relationships (Yee, 2003b). Players may try to be themselves or a fictive persona, but in both cases the relationships have been formed through the character.

Furthermore, MMOGs do not usually let you to change your identity (i.e., name and character appearance, excluding wearable items), which can greatly raise the value of your character. If a player would sell her account, she would potentially lose many of the formed relationships. A player could, in theory, build up these relationships by stating who she actually is, but this could be rather tedious task to perform. According to Yee (2003c) some evidence for this can be found from the results that over 50% of female players (who value relationships in game more than males) and more than 30% of males wouldn’t sell their account for any price.

Guilds are rather common structure for organising play activities in MMOGs. The guilds offer an interface for getting in and familiar with gaming communities. Through a guild a player can find regular company to tackle different quests. Casual friends or even friendships formed through a guild activities are, however, not the only social value guilds have to offer. Since guilds are active communities arranging playable content, they need players on different levels to organise various tasks. By being active in guild organisation, a player can improve her social skills but also learn organising and leading skills. One player describes this as following: “Last year, I was elected as the leader of the guild I’m part of when our old leader (a good RL friend) left. At first, I was a bit concerned about my ability to organize 100 some people from all over the world, but, as it turned out, I learned that I was much more organized than I had thought I would be, and ... that I had an uncanny knack for diplomacy and leadership. The experience made me feel very empowered, and good about myself [...]” [F, 34] (Yee, 2002). This suggests that MMOGs can have life changing effects.

Perhaps the most interesting set of case examples considers the far reaching and intense effects of social values. For example, “A Story About a Tree” by Raph Koster is signifying the issue that MMOGs are not “just a game” (Bartle 2003, 209). In this case, a player named Karyn was found missing from the *LegendMUD* and after a quick check on her personal website, the community realised she had died two months ago. This started an immediate outpouring of grief in *LegendMUD*. There were numerous email consolidations, memorial service, and even a garden of remembrance with a tree bearing a plaque: “In memory of Karyn.” (Bartle 2003, 209). Whether real stories or urban legends, the heart-breaking accounts of genuine sense of loss over someone the players have never actually met in real life, signify the uttermost personal value. The value of a player feeds the value of community, and *vice versa*.

### **Immersion Value**

In terms of customisation, as part of the immersion component in the motivation model, the current value structures are more or less straightforward. You either invest your time in collecting personal gear, or, you pay extra to become more individual. The extra-payment scheme is actually a valid business model of the likes of *RuneScape* and *Habbo Hotel*. While the basic entry is free, you can purchase something extra with real money and, thus, become different from everybody else. For example, in *Second Life* you can spend your (real) dollars to customise your avatar. The science-fiction vision of Stephenson’s (1992) *Metaverse*, with its budget-segregated avatars, seems to become more concrete year by year.

The final set of value cases is perhaps the most difficult to concretise since the concept of immersion – by nature – is highly psychological. There are, however, some typical trends in MMOGs that provide us clues about the potential value structures. Let us start with our personal expedition as *Gopher Tail Minstrels (or GTM)*. GTM was a group of adventurers in the world of *Asheron’s Call 2* who, just out of curiosity and for the sake of fun, formed a party of troubadours. The main point here was not the public performances – although those occurred frequently and usually with keen crowds – but the role-playing of something that fell outside of the pure hack-and-slash pursue of points. After several months of gigs, numerous explorations to remote and desolate areas, and constant gathering of data (i.e., screenshots), the motivation to play faded. However, the memory of GTM never disappeared.

After a disastrous server crash, the only survived screenshot (Figure 3) remains as a testimonial of the days long-gone. The price tag for the additional images might easily become phenomenal, since there is no other concrete evidence of the life of GTM.

**Figure 3: Gopher Tail Minstrels in action somewhere in the realm of Asheron's Call 2.**



Actually, the case of Gopher Tail Minstrels is by no means unique. The loss of one's game character may well be more than just a loss of virtual artefact. And people may react very strongly in that kind of situation: *"On December 25th, 2006 I woke up to a big surprise. No, not a big pile of presents! I woke up to find my World of Warcraft character no longer existed. You may say, 'Sure it's just a video game, what's the big deal?' Oh, when you put 286 days of playtime in one character, it is a huge deal."* (My Crazy Blog 2006). This player, according to his own testimonial, was prepared to sue the guilty party with no expenses saved approach. He continues: *"Now, for the fun part. Finding a law firm that will pursue this case. I will be suing for the 286 days of life this man stole from me, and the \$2000 it cost me to figure out everything about him."* The value, in this case, is not just memories. It can grow to become something even money cannot buy.

## 12 DISCUSSION

The aforementioned cases provide some practical implications to the field of business studies. While the roadmap from existing MMOG to a future business platform is not always clear, there are several key areas that could be harnessed. In essence, all the motivational components of play, form potential areas for commercial applications. This, however, should not result the players being charged more rigorously. Instead, the existing subscription-based business model, could be replaced with transaction-oriented mechanisms that offer ways for user-created content – and business. *Second Life* is a living example of value-adding procedures and virtual asset transaction.

The initial argument states that the more persistent the virtual world is, the greater the need for a formal economy (Bartle 2003, 299). This, however, is not the only approach in contemporary MMOGs. The spin-off businesses (e.g., auctions, gold farming, power-levelling, etc.) all add to the original economy model of the MMOGs. In addition, the concept of MMOG aggregators that integrate several different virtual worlds would make it possible to achieve true interconnectivity between the games. The virtual is not bound within the frames of formal computer systems. The cross-over to the real world has come to stay.

In their own field, MMOGs are rapidly advancing our shift towards game society. Basic ICT and Internet skills will not be enough since people need to master games and playing. Furthermore, people may need to master the business models and structures of virtual economies - with all the ripple effects to and from our real economies. The secondary markets with trading of virtual assets outside the MMOGs, and the novel but difficult to harness value chains provide interesting challenges for both researchers and practitioners.

Still, perhaps the strongest implication of the evolution of MMOGs might be the level of persistency these worlds possess. They currently do have a limited, yet substantial in duration, life span of 5-15 years. What will be the outcome if we truly have MMOG aggregators and systems that can keep your virtual property current year after year? When will the virtual become non-virtual? What is the threshold that needs to be crossed in order for us to start thinking these artefacts as real as the physical ones? Mobile phone life-cycle may be 1-2 years, average consumer products tend to 'last' less



time than they did 10 years ago. The virtual home, built in *AlphaWorld* (nowadays *ActiveWorlds*), that is 20 years old cannot, by any means, be defined as quickly vanishing fad. Actually, it may have lasted longer than many real world houses.

Finally, the question of what is the value of ones virtual identity in the online game community remains a multifaceted problem. Since the perception of value differs greatly from one player to another, there is no concrete solution to the problem. However, through the motivational framework, and by illustrating the role of the game character as main tool to operate in MMOGs, we are able to point out the specific value structures that emerge. If the future business models are able to harness these basic value components, there may be room for development in MMOGs. With diversified added value mechanisms and clear option to select ones personal format of investment, the online games could truly become the *cyberspaces* and *metaverses* of tomorrow.

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## **Customer Focus in UK e-Government: Or, Putting the Politics back into e-Government**

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### ***Abstract***

The techniques and technologies of customer service, as introduced under the guise of e-government, have brought certain aspects of public service users into sharp focus, but at the expense of other aspects. It is hypothesised that this effect may lie behind the failure of half a decade of IT-enabled change in public services to improve 'customer satisfaction'. Remedying this situation, it is suggested, will require a re-examination of the model of the customer which underpins customer service as it has been adopted by public service organisations.

**Keywords:** e-government; public services; customer service; representation; CRM

**Acknowledgements:** A much earlier version of this paper was presented at the British Academy of Management e-Business & e-Government Special Interest Group meeting "New Frontiers in e-Business, e-Government and e-Learning" at Newcastle University November 9-10, 2006. We would also like to acknowledge the useful comments of two anonymous referees.

## 1 INTRODUCTION: THE PROBLEMATIC

Achieving widespread citizen acceptance and take-up of services via new channels presents an urgent and important challenge if we are to realise the benefits from these new and innovative ways of working. In order to do this, we need to improve our understanding of customer preferences, as well as their needs (Cabinet Office, 2006: 52).

In this paper we address an apparent anomaly in UK e-government. Bluntly put, the problem that we want to start with is this: the IT-enabled reform process that goes by the name of e-government has had the idea of customer focus at its very centre, yet there is remarkably little evidence that the actual customers are responding to being focused on in this way. International comparisons have begun to draw a picture of UK e-government matching international standards in terms of the “supply side” but with disappointing take up by the intended users: in short customer focus without (many) customers.

How can we explain this phenomenon of e-government without e-citizens? A range of explanations have been put forward to account for this denouement. Is this just a matter of low awareness, remediable by another advertising campaign and the passage of time? Or are our supposedly world class e-government systems in fact poorly designed and plagued by what Richard Heeks (2006) calls ‘design-reality gaps’. Or is it a matter of relative performance in which, however much public services have improved, they have failed to keep pace with improvements in the private sector?

Our contention in this paper is that there is something more fundamentally wrong here. Specifically, we argue, the problem concerns the representation of the customer underpinning the technologies and techniques of customer focus as they have been adopted by government. We start by pointing out that organisations don’t actually focus on customers; rather they focus on a representation of the customer. These representations shape – perhaps better focus – the attention and the capacity of the organisation to respond to their customers. Issues and areas which fall outside of this focus become invisible, inaudible or incomprehensible to the organisation. It is, we argue, at least partially this problem that generates the ‘they’re not listening’ effect associated with a broad sense of public disaffection with public services.

We complete the paper by arguing that what is required is a democratisation of e-government which is focused on a process of rethinking the representations that underpin the technologies, systems and processes constituting e-government. To recycle a well known slogan from a rather different context, we conclude that there should be “no taxation without representation!”

## 2 CUSTOMER FOCUS.... WITHOUT CUSTOMER SATISFACTION?

Governments have been putting the customer at the centre of e-government in the UK since the late 90s. The *Modernising Government* 1999 White Paper makes clear the close links between the customer, or user, focus and the joining up of services. The emphasis on public service users builds on a long established critique of the public services as being particularly liable to ‘producer capture’ – that is, services which come to be designed and managed for the benefit of the professionals producing those services rather than their ‘users.’ The adoption of the business concept of ‘customer focus’ was, at first, tentative. The White Paper is clearly informed by the notion of customer focus, albeit couched in the more acceptable terms of a focus on ‘public service users’. According to the White Paper the overarching goals of the modernising process are:

Ensuring that policy making is more joined up and strategic.  
Making sure that public service users, not providers, are the focus, by matching services more closely to people’s lives.  
Delivering public services that are high quality and efficient.  
(Cabinet Office, 1999: 6, emphasis in original).

While UK national Government was, at first, somewhat reluctant to use the “customer” label, the suppliers of hardware, software and consultancy who have sought to supply the increased demand which e-government represents have been less coy. A good example comes from the consultants Deloitte Touche, who have produced an influential set of ‘Global public sector studies’ (2000; 2001; 2003a; 2003b) on e-government. As early as 2000, the company’s e-government report, *At the Dawn of E-government* was subtitled ‘The citizen as customer,’ while the 2001 report, *e-Government’s Next Generation* was subtitled, ‘transforming the government enterprise through customer service.’ By

2003, however, (Deloitte Touche 2003a; 2003b) the theme (and language) of the reports had shifted to highlight the cost saving potential of e-government. Those earlier reports had, however, done their job and had placed the notions of customer service, customer focus and customer satisfaction at the centre of the e-government agenda.

Subsequent central government policy documents have been far more upfront about using the notion of customer focus. Almost any UK policy document relating to e-government in the period since 2000 would suffice to make the point. Here we use the example of a 2002 ODPM Guidance to local authorities on the principles that should guide their e-government efforts.

**Joined up** in ways that make sense to the *customer*.

**Accessible** at times and places most convenient to the *customer*.

*Customers* will have more choice over the way in which they contact and receive public services.

**Delivered or supported electronically**, facilitating faster, more reliable and better value services.

**Delivered jointly**, where appropriate, by local and regional partnerships, and connected to a national infrastructure.

**Delivered seamlessly**, so that *customers* are not asked to provide the same information more than once and service providers are better able to identify, reach and meet the needs of service users.

**Open and accountable** so that information about the objectives, standards and performance of local service providers and their elected representatives will be freely and easily available.

**Used by *e-citizens*** through effective promotion of available and accessible new technologies and helping local people to gain the necessary skills to take advantage of the Internet. (ODPM, 2002b: 4 – italics added)

Customer service is, it seems, widely accepted as the core goal of e-government. In spite of this consistent emphasis on the need for customer service, it is precisely this aspect of the e-government programme above all others that is widely seen as underperforming.

First, there are concerns about the poor level of service users' actual take up of the new, customer-focused channels and media which have been built in the name of e-government. For example, in her recent review of UK E-government, Helen Margetts has characterised the situation as follows:

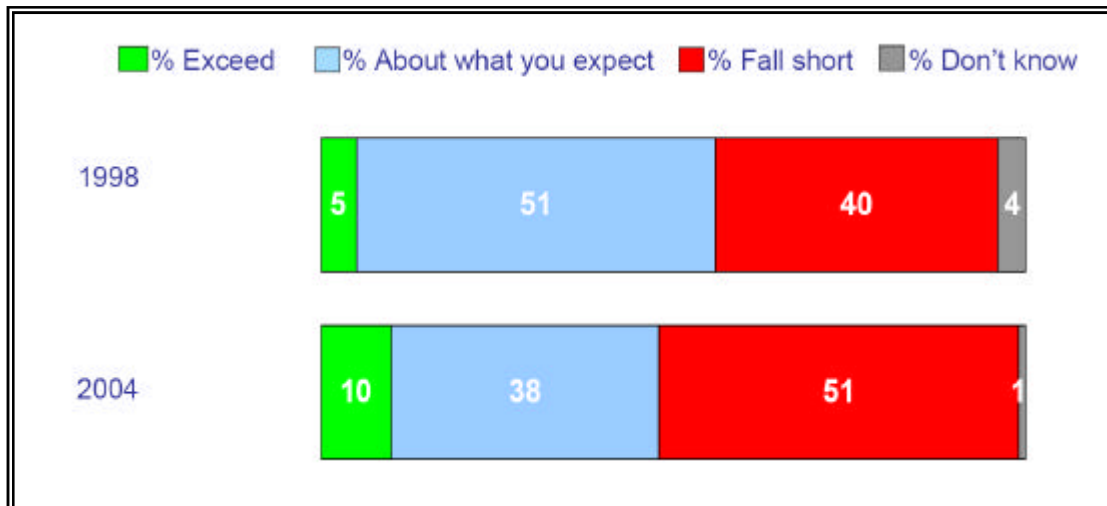
From the demand side, in the United Kingdom at least, the rhetoric is still running ahead of the results. The evidence ... suggests that some of the potential for e-government remains unused. For most citizens, the Internet has brought far more change to their relationship with their bank or various commercial outlets and to their social life than to their relationship with government. Although the United Kingdom scores highly in some of the international rankings of e-government when it comes to actual usage it lags behind other European countries, North America and Australia (Margetts, 2006: 262; See also Jones and Williams, 2005).

European comparisons carried out by Eurostat (2005) indicated that the UK was below the European average for citizen take up of internet-based e-government channels and that it was at the bottom of the 25 Member of States of the EU for business take up of new channels.

It is not only the poor citizen take-up of the new channels offered by e-government that has caused concern. We should not fall into the trap of thinking of e-government as simply 'government on the web'. The technologies and techniques of customer focus are not reliant on any particular channel – modern CRM (Customer Relationship Management) systems support telephony and face-to-face contacts as well as web-based interaction. There appears to be strong evidence of an entrenched preference among UK citizens for face-to-face and, above all, the telephone channel (see DCLG, 2006 and Dawn Hands/BMG, 2001). E-government technologies should be having effects in these, more traditional, channels too. But there is, at best, limited evidence that they have had this effect. For example, recent Ipsos MORI research on public attitudes (Page, 2007) suggests that overall satisfaction with public services has actually declined between 1998 and 2004 (see figure 1.). The picture which the

research paints is, of course, more subtle than that bald assertion: there is a group for whom public services have improved significantly, even if this group is outnumbered by those whose expectations have not been met. A similar mixed picture emerged from the Cabinet Office's (2004) attempt to review user satisfaction across a range of public services. However, this research did note that in respect of local government, which both delivers a lot of citizen interaction and has seen substantial investment in Customer Service technologies, 'overall satisfaction ... has dropped notably over the past three years' (2004: 6).

**Figure 1: Satisfaction with Public Services (Source: Page, 2007)**



Responses to the Question 'Thinking generally about what you expect of public services like local councils, schools, would you say they greatly exceed or slightly exceed your expectations, are about what you expect, fall slightly short or fall a long way short of your expectations?' Base: 2004 - all respondents (1,502); 1998 (5,064).

What is clear is that the investments that have been made in the technologies of 'customer focus' and the techniques of Customer Relationship Management have not (yet) led to the expected improvements in measured levels of customer satisfaction. The British government seems puzzled by the apparent contradiction. Its most recent initiative in this area is the formation of Citizen Panels which directly confront the relationship between the individual and the state in terms of three core questions. First among these is the question of customer care:

1. How can public services make a step change on customer care?  
...
  2. What can the state and individuals do to change culture, expectations and aspirations?  
How far can the state go in tackling damaging behaviour, and promoting positive, and what should be left to individuals and communities?  
....
  3. How should we update the relationship between citizens and the state, focusing on rights and responsibilities?  
...
- (Page, 2007)

This initiative follows on from the local government 'e-citizen' project (<http://www.e-citizen.gov.uk/> [Accessed 17 January 2007]) which bills itself as 'raising awareness and driving take-up of Local Authority e-channels'. The 'E-citizen' project includes a 'take-up campaign' advertising the existence of e-channels through which individuals can interact with local government services, a set of 'e-citizen' 'proof of concept' research studies and a set of 'e-Citizen Live' dissemination events.

There are even some signs that the current government love affair with the customer label might be waning. The 2006 review for HM Treasury by Sir David Varney is suggestive of a new caution about the use of the customer label. Varney argues that the customer identity is, for public services a 'partial' identity and that an exclusive focus on the individual customer can obscure the wider needs of 'citizens and businesses.' Varney is clear that 'there is a lot public services can learn from the best parts

of the private sector on how to engage and deliver services for the customer.’ Nevertheless, he continues:

Many of those in public services also focus on the customer. However, within the public service this is often taken to mean the individual who receives a particular benefit or entitlement, rather than considering the needs of the individual as a whole. People rarely identify themselves as being customers of a particular government service. Often they are trying to deal with a task or an event that does not fall neatly and obviously on any one part of government, such as becoming unemployed, getting married, starting a business or dealing with bereavement. As these events will often cut across departmental responsibilities, the focus has to be on understanding what the individual needs. If the government continues to interpret the term ‘customer’ as being limited to those who transact with government at single points then government will continue to serve citizens and businesses without fully addressing their needs (Varney, 2006: 23).

For Varney then, the ‘customer’ works against a fully ‘rounded’ view of the citizen by focusing only on that aspect of the individual which a particular department or agency interacts with: not so much a customer focus as customer blinkers. Yet Varney’s perspective does not challenge the notion of Customer Focus (or in Varney’s preferred terms, Customer Insight) – rather it argues for a more ‘joined-up’ approach to implementing customer focus based on ‘setting some common standards to ensure that public sector organisations can deliver genuinely joined-up services’ (2006: 31).

To what extent there is widespread public acceptance of the customer label is also not clear. The Ipsos MORI research (Page, 2007) suggests that, when confronted with statements such as ‘Britain’s public services need to start treating users and the public as customers’ some 81% of those surveyed (adults 16+) agreed. (On the conceptualisation and measurement of customer satisfaction in the public sector in the UK see Donovan, Brown and Bellulo, 2001; MORI, 2002; Van Ryzin, 2006). However, more in depth research has shown that at least some individuals, in at least some specific public service contexts, are wary of the customer label. John Clarke and Janet Newman (2005), for example, found that health service users are far more inclined to think of themselves as ‘patients’ or ‘service users’ than ‘consumers’ or ‘customers’. Neither ‘citizens’ nor ‘consumers’ are “the primary categories through which [people] live, and think about, their connections to public services”. Clarke and Newman conclude that the resilience of people’s conceptions of ‘publicness’, ‘membership’, and ‘collaboration’ are both a resource and a problem for New Labour’s approach – “the assertiveness of health users (their willingness to ‘stand up’) is constantly glossed by New Labour as ‘consumerist’, but the desires and anxieties about both the present state of the NHS and its imagined futures suggest a failure to install a consumerist subjectivity” (2005: 13).

To summarise the situation crudely, over half a decade of attempts to bring about technology-enabled re-orientation of public services around the needs of the customer not only has failed to see customer satisfaction in public services rise significantly, but has actually seen it decrease. In homage to Robert Solow’s famous encapsulation of the productivity paradox, we might say ‘we can see the technologies and techniques of customer focus everywhere in public services, except in the customer satisfaction numbers.’ Why? This question is taken up in the next section.

### **3 COMPETING EXPLANATIONS FOR A LACK OF SATISFACTION**

A range of explanations for this paradox have been suggested, each identifying a different culprit. One answer is simply to deny that the very visible investment in contact centres, CRM software, customer service training, and so on has brought about any discernable change in the individual customer’s experience of local government. A variant of this perspective would hold that it is too early to be looking for decisive evidence of changes in customer satisfaction. The key point for this school is that the apparent rapid pace of change in terms of structures and technologies within the public services masks a much slower process of cultural change. Such a cultural change has to overcome a deep rooted resistance to change within the public services. In some versions of this story, such resistance may be conscious and explicitly or implicitly organised (the bureaucrats are hanging on to their privileges for grim death) or unconscious and disorganised, but nevertheless powerful. The implicit solution set for this school includes: maintaining the pressure for customer service; further structural change to ‘unfreeze’ deeply held habits within the public services (e.g., through the introduction of greater choice); and further promotion of the disciplines of customer service among front line staffs (e.g., through customer training). In short a cultural strategy focused on changing the culture of public service workers.

An alternative solution shifts the focus from the ‘customer-facing’ workers to the technologies themselves and their suppliers, both within and outside the public services. The most eloquent exponent here is Richard Heeks (2006). Heeks begins his recent book on implementing e-government with the bald assertion that ‘most e-government projects fail’ (2006: 3). The dominant reason for these failures, according to Heeks, is what he describes as ‘design-reality gaps’ – in short the failure to adequately capture the organisational and individual ‘requirements’ at the design stage leading to technologies which are not ‘fit for purpose’ when it comes to implementation. Other explanations which focus on the technology either concentrate on the quality of design (e.g., web site usability<sup>1</sup>, etc.) or, more typically, on the capacity of public servants to manage large and complex IT projects. In some variants of this perspective, a portion of blame is placed on the IT and systems supplier community (providers of hardware, software and, most importantly, consultancy) who are accused, at best, of overselling the capabilities of their products and services.

If the management of the design and implementation of the technologies and techniques of e-government is to blame, the solution is focused on improving the design and implementation capacity of public services and their ability to manage IT systems and services contractors.

Each of these explanations focuses on processes and forces within the public services and their supplier community. A final set of explanations focuses on relations outside the public services themselves. A first version of this outward perspective examines communication between public services and the public. In this explanation, the public are unaware of the benefits of new customer-focused technologies because they have not experienced them. The solution, then, is clear: advertising and other marketing activities such as the ‘connect to your council’ campaign, (part of the E-Citizen project mentioned above). A second externally focused explanation looks even further. This final perspective is framed in terms of the ‘relative’ performance of public services when set against (the best of) private services. This argument does not deny that the investments in customer service have produced improvements in the customer experience of public services over time (i.e., when compared with the customer experience of the same services years earlier) but argues that this is irrelevant. For this school of thought, customer satisfaction (CS) is determined by the simple equation

$$CS = \text{expectation} - \text{experience}$$

It is, then, customer service performance relative to expectations, that is important, and if expectations rise faster than the quality of our experiences of customer service, then customer satisfaction will decrease, even with improvements in customer experiences. The final point in this perspective is to argue that our expectations of customer service are set, not by our past experience of public service interactions, but by (the very best of) our interactions with the private sector. In short: why can’t public services be as good as amazon.co.uk or as personalised as myspace.com?

Each of these explanations – whether focused on customer facing staff, the design and implementation of IT or the communications or the marketing functions of public services and customer expectations and comparisons – retains the basic framework of the customer service model. What if it is this model itself, rather than the ways in which it is implemented, that is at the heart of the problem of low take-up of, and poor satisfaction with, the outcomes of e-government enabled customer service?

#### 4 A THEORY OF REPRESENTATION

There is, of course, nothing new about questioning the adoption of the customer model in public services (see, for example, Aberbach and Christensen, 2005; Alford, 2002; Fountain, 2001, du Gay 2000 for some flavour of the various critiques). The general tenor of these critiques has been to highlight the collective, that is public, nature of public services on the one hand, and the significance of egalitarianism in the distribution of public services (contrasted with strategies of ‘customer segmentation’ in private services) on the other.

In this paper we want to take a different tack. We want to focus on what, in practice, adopting a technology-supported customer service strategy actually means. What, exactly, is the focus of customer focus technologies? The obvious reply is that customer focus implies focusing on the customer. This is, however, too simple an answer. To begin to develop a more sophisticated response we will make a

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<sup>1</sup> A major UK government website cull announced in January 2007 entails a reduction from 951 to 26 websites and the streamlining of information through two ‘supersites’.



short detour via Gregory Bateson's 1972 essay, pathologies of epistemology (in his *Steps to an Ecology of Mind*, 2000[1972]).

Bateson begins his essay thus:

First I would like you to join me in a little experiment. Let me ask you for a show of hands. How many of you will agree that *you see me*? I see a number of hands – so I guess that insanity loves company. Of course, you don't "really" see *me*. What you "see" is a bunch of pieces of information about me, which you synthesise into a picture of me. You make that image. It's that simple (Bateson, 2000[1972]: 456).

What Bateson is so elegantly alluding to is the motivated aspect of vision or seeing. What we see is, to some extent, the product of our own activity of organising sense data into something meaningful for us. From this point of view, while the environment is certainly 'out there' (it is, fundamentally, a realist ontology), our perception of it is always the work of choosing and ordering which elements to bring into focus and which to ignore or leave as a blur, of making decisions about where to draw the boundaries between objects and between figure and ground. We make those choices and impose meaning on the constant stream of sense data that bombard us. We make the image. It is that simple.

We make that image. But we do not, of course, make that image alone or without help. The most basic categories and frameworks which we use to make sense of sense data are, to a very large extent, inherited from the wider culture. In the context of the organisation, this general cultural framework, or common sense, is supplemented (and sometimes contradicted) by more specialist, domain specific organisational or professional frameworks and taxonomies. Thus, what is true of individuals is, in this case, also true of organisations. Organisations don't react to "the environment" – they react to a representation of the environment (see e.g., Manturana and Varela, 1998 for one interesting take on this phenomenon). This representation is not a mere reflection of the environment but rather a carefully constructed image of the environment built on often painstaking collection of data and its subsequent organisation into charts and tables, facts and narratives. What we must always remember, however, is that it is within the organisation that the choices about which facts and which narratives to select are made.

In so far as 'the customer' is seen as a part of the organisational environment, it too is a representation, constructed using a *selection* of 'customer' data drawn from a variety of mechanisms, but selected and ordered according to a representation that is built and maintained within the organisation. Thus, while the concept of customer focus is intended to orient the organisation externally, to do this it must first orient the organisation internally, towards its own processes and techniques and the categories and narratives which underlie them. Before the organisation can turn outwards, it must turn inwards. Strictly speaking, then, public services thus cannot be built "around the customer" – they must be built around a *representation of the customer*.

The need for such a representation predates the introduction of e-government. However, prior to the adoption of computer-based CRM Systems and the like, the representations of public service users remained diffuse, localised and shared through a mixture of bureaucratic process (forms and filing) and the shared norms introduced by professional training and supported by professional practice. The technologies of e-government have imposed a new requirement for a much more explicit and shared representation of the customer. As Paul Dourish has argued,

...there is simply no questioning the central role of representation in developing computer systems. Software is a representational medium, from the interface on the screen to the bits on the disk. What is called for then is a more nuanced understanding of the role that those representations play, how they are subject to a variety of interpretations, and how they figure as part of a larger body of practice (Dourish, 2004: 208).

The adequacy of the representations which are embodied in information systems is a well established academic concern. Academic computer scientists explicitly worry about 'ontologies' (although there is less evidence of these concerns feeding through into much of the software that is deployed in typical e-government implementations).

If the organisational routines of customer service and, the information systems on which they are built, rely on representations, then our concern here is with three important questions. Who gets to build these representations? What tools and materials are used to build these representations and what constraints do these impose? What are the consequences when these individuals and groups build these representations with these tools and materials and they are employed in practice?

## 5 “CUSTOMER INTIMACY”: KNOWING THE CUSTOMER AND SEEING LIKE A STATE

Customer Relationship Management is based on the goal or target of knowing your customer, of establishing what Varney (2006: 24) calls customer insight, or in Laudon and Laudon’s unfortunate phrase, ‘customer intimacy’ (2007: 260). We cannot, post-Foucault, see such knowledge, let alone such *intimate* knowledge, as a purely innocent appropriation of facts from a stable, objectively knowable world. Foucault’s coupling of knowledge with power should orient us to the extent to which knowledge constitutes its object. Indeed it is possible to make a coherent argument that contemporary Customer Relationship Management technologies do not record information about the customer but rather call that identity into being, shaping a new customer subjectivity (Zwick and Dholakia, 2004).

Our argument here is less radical. Let us start by drawing attention to the visual metaphor behind the notion of ‘customer focus’. Knowledge about the customer is to be gained by looking. But as we have argued, seeing is an active process: in an important sense we see what we are looking for. In figure 2, for example, those who are told to look for a man playing a saxophone (perhaps even implicitly, for example by viewing the picture in the context of other pictures of musicians) will tend to see a man playing a saxophone. By contrast, those told or led to expect a picture of a woman’s head are more likely to see that image. You can only *recognise* what you have already ‘cognised’ (i.e., that of which you have established a mental model). The paradox is that, in order to make sense of the external world we must first look inward to our taxonomies, models and schemas.

**Figure 2: Is it Bill (playing the sax) ... or Hilary?**



Customer service technologies embody just such taxonomies and models. Customer Relationship Management systems which are precisely designed to focus the organisation’s attention on the (external) customer, similarly require the organisation to first focus on the (internal) model of the customer. And this model is, to a very large extent, one that is built into the systems which support Customer Focus. These technologies increasingly form the ‘lens’ through which public services focus on their users.

There is, of course, a substantial literature on how the state envisages its populations, in James Scott’s (1998) memorable phrase ‘seeing like a state’. As Scott has argued certain forms of knowledge require a narrowing of vision. The great advantage of such tunnel vision is that it brings into sharp focus certain limited aspects of an otherwise far more complex and unwieldy reality.’ (Scott, 1998, 11)

However this literature has focused on the state's vision of aggregates of individuals – populations, groups, classes – and the (statistical) technologies and techniques used to order and represent them *en mass* (see e.g., Porter, 1995; Bowker and Star, 2002). The technologies and techniques of Customer Focus and Customer Relationship Management take Scott's notion of focus to a new and much more individualised level.

Which aspects of the public service user are brought into sharp focus by these technologies and which aspects are softened or rendered less visible? The customer that is brought into being is, of course, the classical *homo economicus* of positive economics. This public service user is envisaged as individual, characterised by means-ends rationality, coherence, self-knowledge and self-interest. Additionally the model of the customer that emerges from the rhetoric of customer service in public services is time pressured, demanding and constantly susceptible to rising expectations. This is the model that CRM systems and their associated technologies are built on and this is what they are looking for, what they are ready to re-cognise.

## **6 COMPUTER SAYS “NO”**

If the techniques and technologies of customer service enable public services to see certain aspects of their users, they also obscure other aspects. Behaviours that are not comprehensible in terms of the self interested, self-knowing individual become meaningless or their meaning is blurred. To shift the metaphor from vision to hearing, we can point to the increasingly noted opinion of public service users that ‘they’re not listening,’ that the management of public services are unable to process and comprehend certain aspects of what their users are trying to tell them (see e.g., McHugh, 2006). To mix the two metaphors then – ‘they’re not listening because they can’t see us’.

This effect is not restricted to public services. The disempowered worker, portrayed in the television comedy programme *Little Britain*, whose catch phrase is ‘computer says “no”’, is as likely to work in the private as the public sector. Linda Penny (2005) has beautifully captured the mock sincerity – in her phrase, the ‘corporate bullshit’ – of private sector customer service with its refrain of “your call is important to us.” As Harry Frankfurt (2005) has pointed out, what makes this kind of statement into Bullshit is not that it isn't true. After all, your call really is, in the end, important to the organisation. What makes it bullshit is the lack of sincerity behind it. Your call is important to us, not because you are important, but because your business is important to us. All that changes with the transfer to the public sector or the monopoly infrastructure provider is that what is important about your call is reflected not in the ‘bottom line’ but in the performance management statistics or the volume of complaints to the regulator.

What is to be done? First it is clear that representation *as such* is not the problem. Organisations can only interact with their environments through the mediation of a representation of that environment. The vision of a more direct and “authentic” interaction with the users of public services is another kind of Bullshit (Frankfurt, 2005). Rather than try to avoid the problems of representation by going around it, we propose to tackle representation head on.

One approach here would be to join those who extol ‘the active citizen’ and the much more direct participation of individuals in the governance and management of public services, through mechanisms such as the membership of boards and citizen juries. In this sense, then, users might seek to increase their ‘representation’ within public services. This approach has its limits. As Declan McHugh has recently argued, the desire to be heard does not imply that people are keen to participate more directly in the governance and management of public services:

While the call for more participatory democracy has a visceral emotional appeal, in practice it may only succeed in engaging those already over-represented amongst voters and party members—that is, the educated, affluent and middle-aged. Mechanisms designed to provide greater opportunities for citizens to participate more directly in decision making as a means of increasing legitimacy and reducing the perceived democratic deficit may therefore have the opposite effect (McHugh, 2006: 551).

Such approaches also underestimate the extent to which experiences are shaped by operational decisions taken by professionals, rather than policy decisions taken by governing bodies. Even if we were to endorse widespread acceptance of the ‘active citizen’ role, we would emphasise the importance of first examining how this role relates to the models which underpin the techniques and technologies that mediate service users’ interaction with state bodies.

The problem then, for us, is much more one of opening up representation at the level of the models – representations that are embedded in the standard operating procedures of customer service and its associated technologies. Perhaps the most important component of this is to reverse the desire for ‘intimate’ or ‘personal’ knowledge that is deeply embedded in the theory and practice of customer service. Richard Sennett (2004) has, as usual, got to the heart of the matter. For Sennett the problem with such knowledge is that it shows a lack of respect for the autonomy of the other, the public service user. It doesn’t give space to the other to present themselves as an autonomous being because the public service organisation already ‘knows’, or thinks that it knows, what the user is like. Sennett puts it as follows:

Autonomy, as we have seen is not simply an action; it requires also a relationship in which one party accepts that he or she cannot understand something about the other. The acceptance that one cannot understand things about another gives both standing and equity in the relationship. Autonomy presupposes at once connections and strangeness. (2004: 177)

What is necessary is not that the public services gain intimate knowledge, constructed through the categories and classifications of customer service with their ready-made understandings of the needs of the user, but rather that the user is given some space to define themselves and their priorities. This requires, ironically, that public services show more humility about their levels of understanding of the priorities and needs of users – in Sennett’s phrase ‘the acceptance that they cannot understand things about the other’. The danger is that throwing more ‘understanding the customer’ technology at customer service will actually undermine the capacity of public services to listen to their users and register their needs and concerns.

## **7 CONCLUSION: LEARNING TO ‘REALLY’ LISTEN?**

Let us briefly rehearse the argument. Customer service in public services is only working in so far as the model – the representation of the customer – of the customer on which it is based is meaningful to that customer. When the model is not meaningful it creates dissonance – the public service provider can only see and register their effect on the customer in the terms provided by their model of the customer. Public service user responses that fall outside the parameters of the representation or model become meaningless or have their meaning blurred. This generates the ‘they’re-not-listening’ effect that surveys of public service users have noted.

This kind of effect cannot be reduced by “better marketing” but only by rethinking the model of the customer in a more complex way. That rethinking will involve actually engaging with “customers” and letting them take a role in building the way they are represented. This is, of course, a political process. But it need not imply the dreadful vision of more ‘participation’ in focus groups and meetings as much as the recognition that each service encounter needs a little space for the negotiation of the representation of the user – which might go well beyond the bounds of the customer stereotype.

There are some signs that, in parts of the public sector reform movement, this kind of realisation is being taken seriously. Some of the conclusions to a recent study for local government (Back/RBA, 2006) chime well with this view. For example, the research showed that young people ‘want to set the agenda not just respond to yours’ [that is, the council’s]. Even more tellingly, e-democracy national project leader is quoted as saying: ‘Rather than concentrating on mechanisms to help them speak, authorities should focus on improving their ability to listen, understand and engage...’ (Back/RBA Research, 2006: 7-8)

Yes, of course, most people will respond to the ‘customer’ label to some extent, if it implies an improved choice of access channels; more efficient delivery and other benefits that are relevant to them as individuals. Some data do suggest that some users of public services do want to be treated more as they are by private sector service providers some of the time. But when they are engaged with on a deeper level it seems that they do not relate so easily to the idea of being a ‘customer’ (Clarke & Newman, 2005). They see their relationship with the state differently. So even if uptake of e-channels begins to improve over coming years, feelings of satisfaction towards the public’s relationship with public services may not necessarily follow without a re-thinking of the basis of that relationship.

How can public service organisations solve this satisfaction gap? This paper is not the place to prescribe detailed solutions – a task, no doubt, for a major socio-technical research programme. What we would suggest here, however, is that by approaching e-government by way of the ‘customer’ model that infuses the concept of customer service (and its associated techniques and technologies) at the core of the programme, we start to appreciate how the service user is being represented – and hence understood – by public service organisations. And this is a good place, we argue, from which to begin

to understand why service users may not be fully satisfied with their relationships with those organisations. It leads us to question whether a set of customer-focused practices that have emerged in a commercial setting and which rest on a particular notion of the relationship between server and served can be expected to reliably deliver satisfaction in a public services setting. Further, it suggests that any attempt by government policymakers and practitioners in public services to re-think how the complexity of the service user's role(s) may be more adequately accommodated, needs to be sensitive to the ways in which those roles are re-presented within the technologies and techniques of e-government. Finally, we would suggest that those technologies and techniques should be based on listening to, understanding, and engaging with those users – enabling the user to represent themselves and not to always have the work of representation done for them.

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**Research Note:**  
**Representing Identity and Relationships in Information Systems**

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***Abstract***

This research note is concerned with how identity and of relationship are represented in information systems. It presents a real world example of the problems that can arise in the delivery of social care and explores some thoughts about the application of Peirce's ideas to respond to these issues in the context of case management and record systems.

**Keywords:** identity, relationships, information systems



## 1 INTRODUCTION

This research note is concerned with how the concepts of identity and of relationship are represented in information systems. It is not presented as completed research but as work in progress and as a provocation to thought and discussion in the formulation of future research directions. It starts by outlining a particular case which illustrates the problem in a rather extreme form. The purpose is not to attempt to ask questions about the solution to this case as if it were some sort of computational puzzle, it is not. The purpose of this example, which is drawn from real life, is as a test for the expressiveness and the adequacy of the concepts and terms we use to talk about identities and relationships as they are represented in our systems.

The case concerns an individual called Mary and the problems she faces. The question we must ask is whether our systems language, with terms such as “Identity Management”, “Provisioning” and “Data Warehousing”, is adequate to express her problems let alone offer a framework for articulating some solution, if, indeed, the term “solution” is an appropriate one in the face of the wicked problems we will explore.

The second part of the paper uses some of the ideas of the American philosopher Charles Sanders Peirce as a framework to examine our notions of identity and relationship and how this could have an impact on how we represent and reason about them in the design of information systems.

There are two broad stances represented in current systems and management literatures on Identity Management: the enterprise centred approach and the user centred approach. The first is concerned with protecting the interests of an enterprise and, in this literature, identity management is typically defined in the following sorts of terms:

Identity management refers to the process of employing emerging technologies to manage information about the identity of users and control access to company resources. The goal of identity management is to improve productivity and security while lowering costs associated with managing users and their identities, attributes, and credentials.<sup>1</sup>

In this approach, information is the wholly owned internal resource of the enterprise which assumes complete rights over its use. The second stance in the literature is the user centred one in which the issues of the privacy of the subject are centre stage. In this stance, the concept of identity management is defined in a different set of terms:

(Privacy-enhancing) identity management ... offers a means whereby individuals control the nature and amount of personal information about them that is disclosed. In particular, to achieve privacy, individuals can use pseudonyms and determine the degree of linkability between different occurrences of their data. Through the secure and authenticated use of pseudonyms, accountability of an individual for his or her actions can be achieved without giving away personal data.<sup>2</sup>

While the two stances locate the centre of concern and interests differently, in both of them the relationships within which identities are embedded are ones of supplier - customer or employer - employee.

There is little or no literature to be cited about the organisational and systems issues of identity in the contexts of the caring and developmental sectors including social and health care as well as education. Here, relationships between service providers and service users exhibit different sorts of symmetries and asymmetries compared with the world of commerce and outcomes may include the co-production of new identities and the negotiation of new relationships. There are increasing pressures on public services and the voluntary organisations, which represent a high proportion of the providers in the caring and developmental sectors, to achieve higher efficiency and effectiveness. This is resulting in the increased adoption of the information management and communications techniques of the

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<sup>1</sup> From [http://www.giac.org/certified\\_professionals/practicals/gsec/2646.php](http://www.giac.org/certified_professionals/practicals/gsec/2646.php) . An Introduction to Identity Management, Spencer C. Lee. March 11, 2003

<sup>2</sup> <http://www.jrc.es/home/report/english/articles/vol67/IPT2E676.htm> .

Privacy-Enhancing Identity Management, Sebastian Clauß, Andreas Pfitzmann, Dresden University of Technology, Marit Hansen, Independent Centre for Privacy Protection Schleswig-Holstein and Els Van Herreweghen, IBM Research Lab Zurich

commercial sector and there is an assumption that all the concepts and tools required to address issues of confidentiality and control are available.

In this note I argue that the approach to identity management for the caring and developmental sectors is not simply a question of finding a balance between the enterprise centred and the user centred approaches. It requires a deeper understanding of what we mean by identity and relationship and how we represent them in our information systems.

## 2 MARY'S STORY

This story involves a large national charity concerned with the interests of children and young people. In our city, they are commissioned by the Local Authority to manage the Sure-Start Centres where the parents of babies and toddlers can find support, advice and a range of services. At the time we are considering, one of these centres was being managed, on a temporary basis, by Mrs. Cannybody who is not a qualified social worker but who has done both voluntary and contract work for the charity for many years and is highly experienced.

The same charity also delivers another service in the city. This provides counselling, therapy and support to children and young people who have suffered sexual abuse or exploitation. Clearly, this is a specialised service which is not widely publicised to which clients are referred by professional practitioners.

Finally, our charity also works with the police, probation service, courts and social services of a town at the other end of the Region in a programme of initiatives to control prostitution which is seen as a particular local problem.

Mary is 17 years old and is a single mother with a 6 month old baby. She has been attending Sure-Start but recently, Mrs Cannybody has noticed that she has become withdrawn and unhappy. She cannot, however, get Mary to discuss her problems and, as a result, is concerned about her well being.

Unbeknown to Mrs Cannybody, or anybody else in Sure-Start, Mary is also attending sessions at the counselling service because, a year ago, she was relocated into our city by the Prostitution Response Programme as part of an action to close down a prostitution ring. The pimp who ran this ring was sent to prison and, in the initiative to support the then pregnant Mary, she was relocated and a number of services activated to help her rehabilitate herself and build a new life. She made it clear that she wanted to put her previous experiences behind her and that she was only prepared to discuss them with her individual councillor at the support service.

Meanwhile, Derek, her erstwhile pimp, has been realised on parole, after serving 12 months, on condition that he attends one-on-one and group counselling sessions for ex-abusers which are run by our national charity. While in prison, Derek found the Lord and was born again. He claims to be the father of Mary's child and says he wants to do what is right by her and support them both. The relationship between Derek and his councillor in the local rehabilitation service is not one of supervision and control but is intended to be therapeutic and supportive.

So, within our single, national charity, we have three professionals or workers. Two of these have a relationship with Mary while the third has a relationship with Derek, whose records may have an historical, indirect link to her, for example via the various police records. The question we are faced with concerns how and where Mary's identity and her relationships are represented in the case management, recording and reporting systems of the Charity.

## 3 RESPONDING TO MARY'S INFORMATION GOVERNANCE INTERESTS

The specific background to asking this question is the growing pressure on the charity to provide detailed reporting to the commissioners of the services that it delivers about activities, costs and outcomes. This has led to a proposal by the IT department that what they really need is a "Data Warehouse" as part of a new "Enterprise Information Architecture". The potential providers of these products talk about "single point of truth", data cleansing and normalisation as key values that they can offer to address the organisation's complex information management needs.

Any attempt to approach the professionals engaged with Mary and her baby to elicit use cases, map processes and define data sets and security policies is simply exacerbating their problems: this language is simply not adequate for expressing Mary's concerns and interests or, indeed Derek's, the professionals and the organisations involved. Equally, the policy objectives of *integrated* delivery, *integrated* planning and processes and *integrated* governance may sound laudable and attractive but Mary needs real and dependable boundaries around her relationships and separation of the information

that they hold. Mary's story forces us to reconsider the term "integration" and the assumption that it is a universal, value where more is always better.

When we are forced to consider situations such as this one, it becomes very clear that, if there is to be any resolution, then that resolution is one that will be co-constructed by the individuals involved within the context of the individual cases and relationships. The purpose of the organisational and systems resources that are deployed around the case is to facilitate this co-construction and to provide supportive and safe governance mechanisms. The questions we must ask about such systems concern how they enable the signalling of concern, the assumption, exchange and discharge of responsibility for care with consent, and the appropriate governance of information in the interests, and under the control, of the parties concerned.

Putting this in the more concrete terms of Mary's case: how could Mrs Cannybody signal her concerns in ways that respect Mary's choices? How can Mary's councillor respond and engage Mary in that response? How can the three domains of information remain distinct and separate until and unless individuals with the appropriate rights and responsibilities perform explicit acts of relationship management which connect things together and how, finally, can these acts of identity and relationship management be made auditable, accountable and governable?

#### **4 THE CONCEPT OF IDENTITY**

Before we can begin to consider these difficult questions, we must first establish some groundwork of concepts and meanings. This is ontology in the deeper, philosophical sense, not in the rather superficial sense of the data modeller.

As human individuals we all share an innate sense of self. We each uniquely experience what it is like to have our own thoughts and feelings and also to experience the continuity of individuality through out our lives. This concept of identity and individuality corresponds to what Peirce calls a "First" or monadic concept. The "I" that is delineated is purely self referential and needs no reference to anything else. There are few instances of monadic concepts that we use in everyday life and they seem strange. Much more familiar is the dyadic concept of identity. In this way of framing the issue, I am the collection of attributes that I exhibit to the world and through which I can be recognised. So, I am the individual with a particular date and place of birth, with a gender, parentage, etc. I exhibit a particular demography and any particular collection of information items from this set of items may be adequate to uniquely identify me from within some wider group.

In addition to my demography there is also a set of biometric data which is associated with my physical presence: photographs, thumb prints, retinal scans and genetic maps are examples of this sort of identifying information. Finally there is my signature which is performative data which is associated with, but not necessarily unique to, me. (A forger could practice and make perfect.) This concept of identity – what Peirce calls a "Second" – is two items which, through their relationship or association, form a concept. It is the association of the data with the individual which constitutes this notion of identity. When this data is put into an information system, and clearly, I, the individual, remain in the world outside of that system, we face an interesting set of challenges. Who, for example, owns that system? What is its purpose and what is my relationship with both of these? The ownership of the system that contains this data represents a relationship of potential power and control and, as a result, I, as the subject, have a stake and an interest to protect. It is this concept of identity that is the basis of the two approaches to identity management mentioned at the beginning of this paper.

Unfortunately, the propensity to confuse the data in the system with the realities that it refers to outside of the system is a strong one and there is a rather pervasive attitude in technological and management domains to rely on technical and organisational means and to attribute ultimate value to the information in the system referring to it, for example, as the "single point of truth". But even in the case of a banking system, for example, where the figure in the account does represent the account holder's balance as far as the bank is concerned, we are still left with questions as to whether the string of transactions that have resulted in this figure were executed by the individuals that the system has taken to be their authors. Anyone who has experienced impersonation and fraud will know that the concept of truth is relative here and we need to ask the question "whose truth?"

Arguments like this, and there are many of them, lead to the conclusion that the dyadic notion of identity, whilst it does a job in the world of information systems, is not an adequate one in many circumstances. Certainly when we remember Mary's story, we can see that, even though there is only one individual, Mary, the information system(s) which support the delivery of services to her can not afford to take the process of interpreting identity attributes and recognising Mary away from the contexts of the particular relationships within which that recognition is taking place. In Peircian terms, this is making identity triadic. An identity is the three way linkage between the *means* (information) by

which a *recogniser* (person, institution, agency) recognises an *individual* (person). The purpose of the recognition is to maintain and make use of a shared history, i.e. it is to support a relationship.

In terms of our information systems, this has an important consequence. We understand the concept of identity management with its associated registration and authentication services. We also understand the concepts of relationship management with its case and index support services by which the records associated with different relationships can be combined. Mary's story, as an example of the most difficult and challenging use case, shows that these two sets of systems functions and associated responsibilities cannot be divorced from each other and made separate, independent. Acts of identity management where, for example, a registrar creates and records an identity for an individual and, as a result, the possibility for a set of persistent records is generated and maintained, cannot be assumed also to be acts of relationship management where those records are automatically correlated with others. Creating connections between records are acts which are distinct from those of creating records themselves and must be explicitly accounted for, audited and governed.

In this light, the automation of identity correlation, known as data cleansing, is a particularly significant process requiring the highest level of scrutiny and governance. The technologies and approaches that have been developed to support the process of rationalising insurance and savings account business for banks, are not necessarily appropriate for addressing the information needs of our national charity.

Further, notions of role based access to information does not adequately encompass all of the concerns and issues that are relevant. Cases such as Mary's demonstrate that it is not simply who I am and what my role is that governs my rights to see information about some individual but, in addition, my specific relationship with the subject of that information and the contexts of my activities within that relationship need to be taken into account. For example I may be involved in an ongoing case that is governed by the established consents and a current information sharing protocol or I might be declaring an emergency which will need to be accounted for at some future date in the context of the auditing and governance of my practice. Alternatively, I might, like Mrs Cannybody, be exploring a concern by publishing a query to anyone who has a relationship with the individual she knows as Mary, on the understanding that Mary may have relationships which she wants to maintain quite separately from the one Mrs Cannybody has with her. What the recipients of this narrowcast and specific "publication" do about it is up to them and Mary and Mrs. Cannybody may or may not get a direct answer. She must look to her experience, recommended practice and her relationship with Mary to formulate her next moves.

## 5 SOME IMPLICATIONS

These thoughts about how we deal with identity and relationships in our information systems have some important implications on method and on language. The continued development of both the power and the pervasiveness of information systems has resulted in the situation that many aspects of our lives, development and well being are becoming dependent on how they, the information systems, are constructed and operated. Bateson defines information as "news of a difference that makes a difference" and, increasingly, it is information in systems, rather than in the real world, that is making the key differences in peoples lives. These developments cannot be halted. What does perhaps need to change is the language we use when we plan, develop, deploy and govern them and the range of individuals who have a voice in these processes.

## **Book Review:**

### **E-Business and E-Commerce Management**

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#### ***Book Information***

**Book Title:** E-Business and E-Commerce Management,  
**Author:** Dave Chaffey  
**Publisher:** Prentice Hall: Financial Times Press, UK  
**Edition:** 3rd edition  
**Year:** 2006  
**Pages:** 663 pages  
**ISBN:** 0-273-70752-3  
**Price:** £37.99

**Keywords:** e-business, ecommerce

## **BOOK REVIEW**

The third edition of this book makes an important contribution to the literature by a well-known author, and fills an acknowledged void in the field of E-Business. It provides a versatile introduction to E-Business and E-Commerce, and covers a wide range of applications as well as a valuable selection of real-world cases.

Throughout this book, Dave Chaffey is able to target students studying E-Business and E-Commerce at undergraduate and postgraduate level, as well as practitioners. His main aim is to provide a comprehensive guide to all aspects of deploying E-Business and E-Commerce within organizations, and illustrate these principals in practice.

The book is divided into three parts. The first four chapters introduce and describe the main concepts of E-Business and E-Commerce, as well as the fundamentals, infrastructure and environment of this phenomenon. The second part is perhaps the most valuable, and makes a strong contribution to knowledge with a comprehensive guide to E-Business and E-Commerce in terms of strategy and applications. The final three chapters deal specifically with the implementation of E-Business and E-Commerce.

In the introduction the author provides a clear explanation of the concepts, definitions, significance of E-Business and E-Commerce and its different applications from a consumer and business perspective. This is followed by an outline of the E-Business infrastructure, namely: The World Wide Web, the Internet, Intranets, Extranets, HTTP Protocols and managing E-Business. The last chapter in this section is dedicated to E-Business and E-Commerce environments.

However it is in the second part of this book that David Chaffey makes the most important contribution to this topic. Here he deals with strategy and applications of E-Business and E-Commerce in a logical but robust manner. Through a quite simple presentation, the author is able to illustrate the main topics of strategy definition, E-Business strategy, strategic analysis, strategic objectives and strategy implementation. In chapters six and seven supply chain management and E-procurement are discussed in some depth, followed by a practical insight into E-marketing and customer relationship management in chapters eight and nine.

The last part of the book is devoted to the implementation of E-Business and E-Commerce in terms of change management (the concept, types of change, planning of change, HR requirements, approaches to managing change and risk management), as well as the analysis and design of E-Business and E-Commerce (analysis for E-Business, process modelling, data modelling and design for E-Business). This is particularly useful for practitioners in view of the rapidly changing and volatile nature of this technology in a highly competitive, global business environment. The book ends with a thorough analysis of E-Business applications, maintenance of E-Business systems and how to measure the effectiveness of E-Business applications with web analysis tools.

The style of presentation makes this topic accessible since each section has learning outcomes, management implications and clear links to other chapters. Moreover, each chapter provides appropriate definitions, clear discussion, chapter-by-chapter references, further readings and useful web links. In fact the companion website (a bank of online resources), is an excellent additional resource for the target student audiences to get the most from both the book and their course. Similarly, it makes the book ideal for managers and practitioners of E-business or E-commerce at most levels.

From the reviewer point of view, the book covers a wide range of E-Business applications and offers a valuable selection of real-world cases. These in-depth cases, about global organisations and regional companies practice, are assisted by the clarity of presentation and the author's experience (as an E-Business consultant and lecturer), providing a bridge to link leading edge research and professional practice. This is an aid for effective learning and helps to achieve the aims of the book.

To sum up, the book is comprehensive and, a delight to read. It contains a lot of useful information in its 663 pages and demonstrates that the author is a recognised specialist in this field. The extensive list of references underline the importance of his contribution to this field. He has done a masterful job in first digesting an enormous amount of material and then organizing it in an efficient way to make a clear and readable treatise on E-Business and E-Commerce. This is no easy task where science and technology are constantly changing and converging in a complex business environment.

In summary, the book will be beneficial to students, academicians and practitioners involved in E-Business and E-Commerce implementation. The reviewer believes that this is an exciting book and will provide a classic reference text in this field. In short the author is to be congratulated since he has set a high standard for other writers to follow in this fascinating area.

I highly recommend E-Business and E-Commerce Management.