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Consultants and Enterprise Resource Planning (ERP) Systems

Chris Westrup
University of Manchester, chris.westrup@man.ac.uk

Frank Knight
University of Manchester

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Chris Westrup and Frank Knight

Manchester School of Accounting and Finance,

Crawford House,

University of Manchester,

Oxford Road, Manchester M13 9PL

England

Email: Chris.Westrup@man.ac.uk *Tel: + 44 161 275 4007*

Abstract-Enterprise Resource Planning (ERP) systems have been implemented in the majority of large companies in Europe and the US over the last five years [1]. This paper seeks to address three issues arising from this deployment. Firstly, to consider ERP systems in relation to previous approaches to deploying information systems in organisations. Secondly, to indicate how the mediation by consultants is of importance in the deployment of ERP systems. Thirdly, based on our analysis, to seek to predict future trends and issues in the use of information and communication technologies by organisations.

INTRODUCTION

Over the last four years, Enterprise Resource Planning (ERP) systems have been deployed in most of the larger organisations in the Europe and the US [1]. There is a large literature in popular journals and several books on this phenomenon [2, 3].[1] Mostly this literature focuses on how to implement ERP systems and the future direction of ERP. Case studies are used, but, in depth, case studies are rare [4].

The ambition of this paper is somewhat different. First, the paper seeks to link ERP systems to prior approaches, in particular, the last idea that strongly influenced IS deployment, business process reengineering (BPR). Second, it questions the much quoted view that ERP systems incorporate 'best business practice' and shows that this is an effect that has to be constructed. One of the key players in this activity is argued to be management consultants. Using empirical evidence the paper elaborates the pivotal role of consultants and proposes that much of the ERP phenomenon is based on the efforts of management consultants to create new markets for their expertise. This is somewhat similar to the case of BPR. Finally, the paper discusses the implications of this argument in terms of future trends in IS for organisations. In short, it is suggested that organisations will continue to be offered the seductive vision of strategic positioning and control through IS. This is the business of both consultants and vendors. But, at the same time, IS in use will continue to fall considerably short of these expectations. In part, these shortcomings derive from the view of organisations as processes: an approach which legitimates the role of senior managers and ignores the contextual skilled practices necessary to make organisations work.

RESEARCH METHODOLOGY

This research is based on an extensive literature review of ERP systems and on fieldwork. The main empirical evidence draws from interviews with six senior managers in IT consulting companies in the UK in the summer of 1999 [5]. Letters of request were sent to all twenty-three 'partner firms' listed on the SAP website in the UK. Six companies responded and indicated their willingness to be interviewed. Three of these were large global consultancy firms, while the other three were small to medium sized firms who were dedicated to providing business improvement through the implementation of mainly SAP systems. In four cases out of the six, the persons who responded and who were interviewed were senior managers of the companies, whilst the remaining two were consultants. The interviews were semi structured and lasted between an hour and an hour and a half. One interview was done by telephone due to difficulties in arranging a meeting. All interviews were tape recorded, with the interviewees' permission, to allow for a full transcript to be made.

The results obtained were the opinions of six individual ERP implementation practitioners. It could be argued that these could be 'embellished' accounts compared with what is actually happening, or that they are the rational reconstruction of 'perfect examples' in contrast to reality. Furthermore it could be argued that what has been obtained are viewpoints particular to the interviewees and not representative of the consultancy companies as a whole. These are valid criticisms, but do not deflect from the point of the research – to provide an indication of what consultants report is happening to organisations who are deploying ERP systems.

Other empirical material is also drawn upon including longitudinal research on a well-known early adopter of ERP,[2] and the results of a series of case studies on the links between management accounting and IS [6].

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[1] See, for example, the popular journals InformationWeek, Computer Weekly, InfoWorld, ComputerWorld

[2] At present, the confidentiality of this company has to be respected. It is hoped that this proviso will be loosened in the future.

The current concerns about ERP - shortening deployment times, reducing costs of implementation, avoiding disruption in implementation, skills shortages, improving training of users, what happens to systems once installed, linkages beyond organisational boundaries - are all pressing issues for managers and users caught up in processes of installing or using these systems [7, 8, 9, 10]. What is less clear is how some of these issues become formulated and their resonances with past attempts to deploy IS in organisations. Exploring these issues can give insights into current predicaments.

The rise and demise of BPR is a striking recent phenomenon. In 1989, the concept was coined, by 1993 70% of companies were using BPR, by 1999, BPR is a acronym consultants dare not name [11, 10]. As one senior consultant in CapGemini remarked 'The market is bored by the name'. Why?

A positive explanation resides in a remark from the same consultant that 'BPR is simply part of the toolkit.' BPR is used for the minority of applications that differentiate a company from competitors. A negative explanation is that BPR is associated with overblown expectations of improvement in processes and reduced costs; neither of which took place as expected in the majority of companies [12].

Arguably, BPR as an approach conflated several problematic issues. First, it privileged management as those who could make a difference through decisive action. Second, redesigning representations of organisational processes on paper was conflated with being able to change successfully working practices. Third, it was presumed that external experts could be brought in to communicate best practice using BPR. Fourthly, it was believed that IS implementation was not a problem. Redesigned organisations could develop relevant IS without much difficulty.

Theoretically, each assumption is suspect: managers tend not to make rational decisions - organisations usually muddle through [13]. Organisational processes, even apparently simple ones, are enacted through skilled performances of people [14]. Remove the people and you generally remove skilled performance. External experts have their own agendas nor can knowledge be transmitted in a simplistic way [15]. Finally, IS implementation, especially one off applications, is costly, time consuming, and fraught with uncertainty [16].

However, it is the parallels between BPR and ERP that are of importance here. The similarity in the rapid widescale deployment of BPR and ERP in organisations is striking. In terms of the issues raised for BPR, ERP systems also privilege management as decisive decision-makers who can make a difference. They decide that ERP will go in; they decide on demanding timescales and cost reduction targets. Secondly, ERP is formulated to standardise business processes expressed as data flows and procedures. ERP and BPR share a common assumption on the nature of business processes and the amenability to successful redesign. Thirdly, external experts i.e. management consultants are used to access and transfer knowledge about ERP. Finally, there is a difference. ERP systems are premised on the problematic nature of customised, in house applications. Instead, they promise standardised, reliable IS solutions. In many ways this is a form of outsourcing.[3] But this apparent difference is only one of degree. Both BPR and ERP are based on a belief that IS is a key element in solving management problems by reducing costs or increasing business effectiveness.

Given the demise of BPR as a concept, can this be put down to the one area of difference in underlying premises between BPR and ERP - an overreliance on in-house IS applications for success in BPR? The short answer is no as many authors including Hammer have outlined [17]. The implication is that the phenomenon of ERP could follow that of BPR and we may well find that in five years time few will wish to even mention the acronym of ERP. A possible interpretation would be as a management fashion [18, 19][4], but, as is discussed later, more can be said than that. What this paper seeks to do is to explore more closely *how* phenomena such as BPR and ERP circulate and are adopted. In investigating this, the next section focuses on the nature of business processes within organisations – a key concept in ERP systems.

THE NATURE OF BUSINESS PROCESSES

The work of Michael Porter in the early 1980's has been particularly influential in identifying business processes as a key concept in the analysis of organisations and their environment [20]. Not only does a company have an overall value adding process, but the organisation can be subdivided into a network of value adding processes each with its own suppliers and customers which may be external or internal to the organisation. This conception of business processes sites responsibility for business processes within small groups of workers in an organisation and equally identifies that their relationships with others are based on being in a value chain of business processes which can criss-cross organisational boundaries. ERP systems use the concept of the business process as does BPR as a means of representing how the organisation works.

In ERP systems such as SAP R/3, there is a standard reference model which contains a set of event driven processes which can be customised to represent how the organisation operates or will operate. This reference model may also be viewed as data structures (data view), information flows between processes or as an organisational structure [21]. Using the R/3 analyzer, an organisation is first considered as set of functions, for example, standard order handling, some or all of which can be selected for analysis. Each component is then show in terms of the processes available in the reference model. These processes may be selected and customised for an individual organisation.

It is the presence of a reference model for a large number of different industries within an ERP system, which gives rise to the claim that an ERP system incorporates best business

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[3] We are indebted to Frank Land for this idea.

[4] We would like to thank an anonymous reviewed for drawing this work to our attention.

practices. For example, Bancroft argues that '[t]he modules included within the R/3 [ERP of SAP] system are built on best practices, the most efficient and effective ways to complete any process or subprocess' [22]. Bancroft does give the proviso that these practices may slightly lag behind industry best practice because of the 'nature of systems redesign'. This claim raises the question of what is best practice and how it is related to business processes?

Dick Boland outlined what he termed five fantasies of information some years ago [23]. The nub of his argument is one of problematising the objectifying of information from the practices by which information is made meaningful and applied in organisations. Rather than proposing that having details of a customer, i.e. 'information', is enough in itself, Boland draws attention to the contextual relationship and workpractices, which draw on this information as a resource. It will be argued here that, like information systems, the move to representation of work practices by business processes can be viewed as a series of fantasies which encapsulate some of ambitions of those seeking to use EPR systems.

Boland's first fantasy of information – 'information is structured data'- points to the dangers of believing that structured data, as opposed to meaning, is information. This view tends to ignore the role of people in enabling workpractices and overlooks "the importance of dialogue as the basis for all human understanding" [24]. In relation to ERP this fantasy can be extended here to consider that 'business processes are structured tasks'. A view that similarly ignores the workpractices in making structured tasks operate. The existence of skilled workpractices can easily be identified when the consequences of people 'working to rule' are observed.

His second fantasy – 'an organisation is information' – can be extended to the view that 'an organisation is business processes' which again overlooks the role of people in the enactment of workpractices.

The third fantasy – 'information is power' – supposes that power is invested in possession of an object of information rather than in the relations by which one can act using that information. In terms of ERP, a third fantasy is that 'the identification of business processes is power'. Such a perspective leads to a belief that the mapping out of business processes can lead to re-engineering these processes. This viewpoint encapsulates the assumption that possession of the representation of business processes, in itself, can lead to change and it downplays to role of people and groups in such an ambition.

The fourth fantasy – 'information is intelligence' – removes human input completely from the production of intelligence and supposes that 'strong AI' is possible. In terms of ERP, this fantasy is akin to one where 'best business practice can be encapsulated as business processes in an ERP system'. What is presumed is that an ERP system can simply act as a repository for best business practices, which can be brought into an organisation by purchasing an ERP system. The importance of people and how they work to perform business practices is, once again, missing in this perspective.

Finally, the fifth fantasy is one where 'information is perfectible' and a perfect single perfect meaning is both desirable and attainable. For ERP, this fantasy can be extended to one where 'business processes are perfectible'. In other words, that procedures can be developed and refined so that a perfect business procedure can be created for any specific business function. What is lacking here is an appreciation either that business procedures are enacted by people and technologies or that the results of automated processes have to interpreted by people..

In short, Boland argues that "[c]ollectively, the scientisitic fantasies of information picture the design of an information system [or process] as a purely technical act. Clearly this is not the case." [25]. Extending his argument, this paper proposes that ERP design and implement is also considered as a technical act. One in which issues of cost, speed of implementation, avoiding disruption, and so on are paramount and where the importance of the workpractices performed by people are downplayed and often ignored.

Though Boland's work is of use in clarifying issues of importance for ERP implementation and use, other theorisation and research points in a similar direction. For example, research, informed by the ethnomethodological tradition of work place sociology, shows that work practices are performed in ways which require much more skilful action than previously has been recognised [26].

ERP systems therefore are not simply technical systems which do not have a social content. Instead, the reference models in ERP are created with a specific view of how organisations work. They thus contain an embedded view of the social practices of organisations as discussed above. This understanding moves us away from the naïve position that technology is, in some sense, neutral, but it still does not explain how the embedded social content in ERP systems becomes expressed in the workings of the organisation. Or, as management would see it, how to leverage best business practice from the deployment of an ERP system. Given that the conception of business processes in ERP systems is, at best, incomplete, it is likely that ERP implementations will, in themselves, either fail early on or, as is more likely, they will require considerable skilful adjustment by those working within these organisations to make these ERP systems 'work'. In other words, ERP implementation is a constructive activity which needs not only a linkage between the reference models of an ERP system and a model of the organisation's business processes, but requires considerable change in the ways in which workpractices are accomplished. This is far more than training users to follow the ERP system which, in itself, will not link current, and often unarticulated, workpractices (how things are done round here) with the new work process embedded in the ERP system.

Of course, vendors of ERP systems are naturally anxious that ERP systems 'work' in organisations, but perhaps the key actors in constructing conditions for ERP systems to operate are management consultants.

ERP, CONSULTANTS, AND KNOWLEDGE MANAGEMENT

If an organisation wishes to deploy an ERP system, then it is clear, given the scale of ERP systems, that this rarely can be

done completely from within. On the other hand, ERP vendors cannot provide complete support for every installation process. Why? One of the major issues is one of escalation; the growth in companies beginning to implement ERP systems has grown very rapidly in the last four years. This has made it very difficult for ERP vendors to provide support with skilled staff for a rising number of installations. Hence, ERP vendors have sought to enter into partnerships with others to assist in ERP implementation. SAP's development of the TeamSAP Partner Program linking consultants companies, technology companies, and outsourcing companies, is a case in point [27]. This approach can be seen as seeking to construct (and maintain) a network of actors (the vendor, consultancy companies, technology companies, customers) which can be controlled, at least in part, by SAP [28]. Given that consultancy companies will look for work in this arena anyway without the control of SAP, then it makes sense for SAP to seek to enrol them in a network. In this way, the customer company is offered a network of SAP certified services to 'assure[s] success throughout planning, implementation, and follow-up changes' of the SAP implementation [27]. SAP extends its capacities to make ERP systems work in specific sites or to put it in their terminology 'developing leading-edge business application software solution[s].' [27]. The consultancy companies benefit from having the accreditation of SAP which provides them with training, contacts with potential customers, and legitimated expertise in this arena. The question remains what services can management consultants provide that will be of benefit to organisations implementing or using ERP systems? Perhaps, one of the important issues is the knowledge that consultants have of ERP systems and applying this knowledge to the client organisation. This issue goes to the heart of the question of what consultants can do and the ways in which ERP systems are shaped by management consultants. These questions will be examined by first looking at the concept of organisational knowledge and what scope consultants have in being aware of this knowledge.

What knowledge is, is a widely debated question.[5] For many in the area of organisations, it is considered that knowledge is an important source of sustainable competitive advantage [29] and its management has become to be seen as a key issue. For the purposes of this paper, two positions can be identified. First, those who consider that knowledge is an objective entity which can be transmitted, stored, and managed as such (often referred to as a positivist view), and, second, those who consider that knowledge is linked with interpretation, meaning, and understanding (an interpretivist view). Elements of both positions may be found in the following analysis.

Scarbrough [30] using Blacker [31] identifies five types of organisational knowledge. Firstly, *strategic knowledge*, which focuses on, the cognitive maps and mind sets that shape strategy making. Secondly, *structural knowledge*, which is embedded in the structure of the organisation and includes the

templates used to guide the co-ordination of different activities. This may constrain change, but equally it can contain considerable codified knowledge that may have accumulated over a long period of time. The third type is *systems knowledge* which is encoded in the major systems of the organisation such as the information system. This form of knowledge is linked both to structural features and to the definition of certain roles. Fourthly, *cultural knowledge* which refers to the values and norms of individuals and groups often developed over long periods of time. This knowledge is communicated through story telling rather than factual information. Finally, *routines* are more tacit in nature and are found in communities of practice, which may share knowledge, and experience of a specific task. Though this classification is susceptible to critique, the purpose here is simply to illustrate arenas within an organisation that are more likely to be influenced directly by management consultants.

This classification of organisational knowledge indicates that the abilities of consultants can lie in two areas: their capability to alter the strategic thinking of an organisation and their capacity to influence the systems knowledge of the organisation through the promotion and introduction of new systems of working. Conversely, the limitations of management consultancy can be identified as their lack of understanding of the organisation of a specific companies' structural knowledge, the difficulty of consultants understanding and appreciating an organisation's cultural knowledge and, finally, a lack of awareness of the specifics of organisational routines. Arguably, because certain aspects of organisational knowledge are not amenable to direct management consultant influence, we can expect that these areas will either be neglected in management consultants' analysis or seen as trivial.

Put differently, solutions provided by consultants, and most other external organisations, will tend to focus on either strategic issues or systemic 'solutions' because both these areas of organisational knowledge are amenable to representation and to the transfer of commodified knowledge based solutions from elsewhere.

ERP systems are a good example of this emphasis as they are a solution, which can be imported into an organisation. They can be framed as a strategic issue; for example, in providing access to best business practices as discussed above. ERP systems are also systemic solutions argued to change organisations through change in the information systems and business processes. For instance, Ernst & Young, in their website, describe ERP consultancy as '.. a rapid and proven approach for quantifying the business case for driving your organisation to higher levels of performance' [32]. The quote shows that a strategic direction is viewed as being caused by the application of improved systemic knowledge in the form of an ERP based system.

What this paper now seeks to show is how management consultants' ways of discussing issues, changes and shapes the way in which ERP systems are seen and implemented.

SHAPING ERP SYSTEMS

In tracing the literature on ERP systems, it is interesting to see how discussions on these systems have changed in less than four years. This could be seen as a learning process in which the lessons learnt in the deployment of ERP systems then lead to a changed perspective on ERP. To some extent this is true, but this paper argues that two further features need to be considered. First, the *expectations* placed on ERP systems from consultants, vendors, and then project sponsors, to a large extent, will always be unrealisable. This is due to a fundamental misapprehension of the nature of business processes as described above. Second, that the deployment of ERP systems is taking place in a *marketplace* of ERP vendors generally mediated by ERP consultants. Their aims, though never publicly formulated, are to sell ERP systems and consultancy services respectively. For these reasons, it is likely that the deployment of ERP is shaped by these concerns as much as any other.

Bancroft [33], in her widely cited book on implementing SAP/R3, argues that re-engineering (BPR) after implementing SAP is possible, 'though not recommended'. Instead she proposes that a structured process of re-engineering existing business processes in relation to the SAP R/3 reference model is desirable. She does quote one company, NEC Technologies who did the opposite; they '..decided to implement R/3 in vanilla from and do the re-engineering after the system was operational! (sic)' [34]. Current consultancy advice has changed. Gill [7] argues that customisation should be minimised and that, where possible, organisations should change to SAP R/3 reference model processes used in standard SAP industry suites.

Such a viewpoint was echoed by consultants in the UK. A senior consultant in debis IT stated that "Focus on the design and conceptual thinking stage of the project takes 8-10 weeks – 'how are we going to use this product to implement the processes we want to implement within the organisation - not what processes does the company need'. We use the processes within the Reference Model". Another consultant in a company called Access agreed - "In order to do a rapid implementation one must try to change as little as possible from the vanilla SAP. The approach on implementations now is to get it in as quickly as possible for two reasons:
   - Customer feels that the purpose has been achieved if implementation can be 9 months or less.
   - If we can convince them to delay undertaking BPR and other tuning until after the foundation system is up and running, they will be more receptive to making necessary changes as they will be able to see what the product can offer."
A senior consultant in Axon Consulting put it like this - "It is not a choice. It is not like bringing them into a BPR-type environment where you take a white board and ask them 'what would you like?' It is saying 'you have bought this product, or your Board has bought this product and we are here to tell you what you are going to get, not to ask you what you want' .. [W]hen we go into a company like Paper[6], the BPR bit takes about 4 weeks, we don't do diagrams generally, we don't do

mapping and process modelling, we don't do extended organisation restructuring or anything like that. What we do is build an SAP solution in about 4 weeks."

In short, the aim of consultants now is get a system in early, at a low cost, by using the processes in the standard Reference Model in most cases – the 'vanilla' solution. Some of this change in emphasis may be due to a move towards smaller organisations, but much of it appears to get higher visibility for ERP, to show that the implementation affects the organisation early on. In particular, the need to reduce the costs of consultancy in relation to software costs was seen as important. This was seen as an issue by an ERP vendor SAP, as well as business customers themselves. As the senior consultant in debis IT noted, "originally firms were charging 20-50 times the cost of the software to implement it. This criticism resulted in SAP saying to their partners that if they wanted to continue to work as a partner then they should concentrate on getting the software in and operational using the processes embedded in the product, rather than getting embroiled in 'clean-slate' type process developments. Now SAP say that consultancy should cost 1-3 times the cost of the software". Another senior consultant from Axon spoke of implementation costs recently reducing to 2:1 and even lower than 1:1 today, due to the use of rapid methodologies and competent implementation techniques.

Marketplace considerations are important, consultants will often go into a tender for business and therefore have to bid competitively. As a consultant at Andersen Consulting commented, this results in anything but the basic foundation system being left until later where non-tender optimisation work can be offered.

Another issue for companies has been the year 2000 problem which has led to many organisations implementing ERP systems simply to replace legacy systems so avoiding this problem and resolving the Euro issue at the same time. All the consultants spoken to recognised this and commented on the need to get ERP systems working early. However, for consultants, this has given rise to a problem. ERP systems sales have now fallen as the year 2000 issue is tackled and for consultants, an important issue is how to continue consulting in this area. The senior debis IT consultant put it like this – 'firms such as debis are now going to firms which have had an implementation and looking to sell them improvements – post ERP-type optimisation. This is due to the dip in the ERP market, as well as there being a need.' He spoke of consultancy moving towards 'change management' rather than what he termed the 'technical' implementation of ERP systems.

Other consultants had similar comments. Some saw that a move towards further ERP development was caused by problems with organisations' current ERP systems. These problems could be financial with no return on investment, user dissatisfaction with their system, and a recognition that more can be done with the system which they are unable to do themselves. Few companies appear to have ever done a financial appraisal prior to implementation which indicates that ERP implementation was seen as something that just had to be done. The senior CapGemini consultant stated that 'we are going back and doing a lot of optimising, stabilising,

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[6] Name of large multinational is disguised.

retro-fitting and backfilling: BPR work or functional implementation work that was deliberately left on the shelf, possibly for very good reasons if looking at a time constraint – 'let's get Millennium issue solved and leave some functionality on the shelf to make the required time target'. Our whole rationale behind enterprise effectiveness is looking at end-to-end processes e.g. order to cash, purchase to supply etc.".

However, the recognition of what can be done with ERP systems is not simply coming from the customer organisations: consultancy companies are active in developing expectations about what is possible with ERP. As mentioned by the CapGemini senior consultant, the vision of end to end processes is very appealing to organisations and is actively promoted by consulting companies. A similar argument is one in which e-business is seen as the key issue for organisations. It can be seen that organisations are rushing into customer relationship management systems for e-business without either costing these systems or seeking to link these systems with their 'back office' ERP systems. ERP vendors are also adapting, even re-inventing (see SAP for example) their systems to make them compatible with internet applications [35].

An example of how consultancy companies construct expectations and seek to shape ERP systems is found in a Deloitte survey in November 1998 [10]. Deloitte identified three phases of post ERP use. Firstly, a dip in productivity in the first three to nine months which is combated by redefining jobs, establishing new procedures and fine tuning ERP software. Secondly, a stage taking between six and eighteen months, which involves skills development, structural change and process integration. Thirdly, a stage of one to three years duration which is one of transformation where 'the synergies of people, processes, and technologies reach a peak'. Such a pattern for post ERP development creates roles for consultants in assisting in making these various stages take place. On the other hand, other, equally convincing patterns could be produced. A possibility might be created around user dissatisfaction with ERP systems [10], the problems of disciplining the workforce around ERP embedded processes whilst attempting to foster creativity and work flexibility, or the advent of e-business as destabilising the ERP process based business or technical infrastructure.

A FUTURE?

When the phenomena of BPR is explored, one of its interesting features is the speed by which management consulting companies took BPR and embedded it as a commodity which they could sell to other organisations. This paper has already looked at gaps in the abilities of consultants to deliver the expectations they had raised. These gaps centred on a misrepresentation of the nature of business practices and the inability of consultants to appreciate or address organisational knowledge that resides in company structures, cultures, and work-practices. In turn, BPR is no longer discussed as such: certainly it is seen as a rather discredited approach by many organisations. And, yet, consultancy companies must continue to ply their trade.

ERP systems have similar characteristics that make them attractive to consultants. The expectations of these systems focus on the possibility of a technology based systemic approach in resolving problems of organisational efficiency, old computing technologies and bringing in best business practices. The knowledges required are mainly strategic or systemic to use the typology used by Scarbrough and both are amenable to being applied by consultants. A key difference is that the technology is itself under the control of an ERP vendor whereas BPR could be adapted and applied by anyone.

The future looks like it have resonances with the past. It is to be expected that ERP systems will soon be seen as tomorrow's legacy systems embedded processes in reasonably efficient but inflexible forms. Questions will be raised over the financial return of these systems and their value to organisations. Given the assumptions in ERP of business processes as systemic and predictable, we can expect that the issue of a skilled and flexible work force being forced to work with an inflexible technology will come to the fore. At the same time, new approaches will be seen as important; customer relationship management is one; middle-ware to link disparate but well crafted business systems is another. It will be seen that optimising business processes within the organisation is not the area of greatest benefit to business; this will be seen to reside in business to business relationships, flexibility and a skilled workforce.

In other words, the future role of ERP systems will be shaped and reshaped and perhaps soon discarded by the interplay of many groupings, but one of the primary mediating groupings will be consultants and consultancy companies. They will continue to seek to gain or retain markets for information systems consultancy services that must be predicated on rapidly changing technologies and businesses. It is in their interest that the future unfolds in this way. Similarly it is in their interest that failures in the past are always seen as solvable by remedies they have in the present or can produce in the future. Thus, we have, at least, one major player in the information systems arena craving change for change's sake so that their role and markets can be expanded and sustained.

Of course, consultancy companies do not have total room for manoeuvre, they themselves may show that they are subject to competition from other consultants. However, these consultants will probably have similar interests at heart. What could be more problematic are moves to remove roles for consultants. For example, the creation of ASAP as a means of deploying SAP ERP systems seeks to reduce the role of consultants to a minimum. Nonetheless, because the role of consultants is based on issues of judgement and non codified expertise; in part due to the very speed in which technologies and businesses are argued to change, then the scope for displacing consultants from their arena remains limited.

Much of what has been argued above has resonances with the analysis by Abrahamson and his colleagues on the procession of management fashions in businesses [18,19]. In this paper, there is not the space to engage with his analysis is any great detail, but some points of similarity and difference with the analysis in this paper can be identified.

There is agreement that a succession of changes in management techniques can be observed and that these are not simply 'force[d] … onto gullible managers.' These are significant areas of agreement.

What is problematic, is threefold. First, there is a general lack of analysis of *how* change takes place. Abrahamson identifies changing 'fashions', but here we seek to identify the role of management consultants as key players in creating a dynamic for change. Second, we would like to emphasise more fully the linkages between succeeding techniques. For management consultants, each technique's demise is predicated on the existence of the next technique, which they can supply. For example, it was notable in a recent seminar on ERP that two consulting companies sought, in their presentations, to seamlessly move from ERP to e-business as the key issue [36]. Finally, we are not convinced by the argument Abrahamson & Fairchild advance that '[e]motionally charged and largely uncritical discourse vaunting the quasi-magical potency of a management technique characterises an upswing of a fashion wave and a more thoughtful and critical attitude towards this technique characterises the downswing of a fashion wave [19]'. The first part is perhaps not inaccurate in describing the advent of BPR, ERP or e-business. However, we have yet to observe managers publicly repenting at leisure. Rather, we find that one technique appears to shed both its name and its overblown expectations and quietly becomes incorporated in a following approach. This appears to have been the case with BPR and ERP as described by management consultants above.

The above discussion may make it appear that we regard managers as dupes and at the prey of any passing fashion. We would like to be far more cautious in our assessment. A host of other reasons could be advanced for the application of new techniques, which do not denigrate managers, could be advanced. Institutional isomorphism where one company considers it must follow others due to external (perhaps shareholder) pressures could be one.

CONCLUSION

This paper has sought to show that the phenomenon of ERP systems has similarities with prior approaches in information systems notably the rise and demise of BPR. Many of the issues that are and remain central to ERP introduction and subsequent use are discussed, but it is argued that ERP systems are predicated on a restricted view of business processes. By considering the issue of organisational knowledge, the role of management consultancy companies in shaping rather than simply facilitating the development of ERP systems is proposed. For the future, the paper predicts that the demise of ERP systems can already be detected and that other systems will be advocated. These will be based either on a re-interpretation of the role of ERP systems to co-ordinate with business to business systems or on other, more flexible middle-ware approaches which seek to retain flexibility, a skilled workforce and efficiency. However, the basic recipe will be somewhat similar: raising unattainable expectations through manipulating strategic and systems based knowledge in organisations. These are the arenas which consultancy companies can most readily address, which are amenable to relatively short term intervention, and which can be commodified. However, organisations and others are likely to witness continued cycles of apparently novel technological based 'solutions' followed by reassessment and replacement by another. This does not mean that organisations remain basically the same: in fact, to some extent the opposite occurs. Management (and management consultant) directed change becomes frequent and disruptive of other forms of organisational knowledge. This leads to a conclusion that organisations which refrain from many of these technological 'driven' but consultancy mediated changes may be the ones which end up as most successful! Perhaps these are the organisations that settle for bricolage and muddling through [37].

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