Unlocking Sustained Business Value from IT Investments: Balancing Problem-Based and Innovation-Based Implementations

Professor Joe Peppard
Cranfield School of Management
Cranfield, Bedford MK43 0AL
United Kingdom
Phone: +44 (0)1509 223138
Email: joepeppard@eircom.net

Professor John Ward
Cranfield School of Management
Cranfield, Bedford MK43 0AL
United Kingdom
Phone: +44 (0)1234 751122
Email: j.m.ward@cranfield.ac.uk

Abstract

Surveys continue to highlight that most senior business executives are dissatisfied with the value they believe their organizations are deriving from investments in information technology (IT). What is often forgotten is that IT in itself has no inherent value – just having a particular system or technology does not automatically confer any value to the business. Therefore the realization of business value must be actively planned and managed. This article reports on research conducted over the last decade that explores how organizations can achieve the required business value from their IT investments. The research suggests that organizations should adopt a two-stage approach to the implementation for large-scale IT projects. This model distinguishes between ‘problem-based’ and ‘innovation-based’ implementations. The underlying message is that unlocking business value from IT investments is a journey not a destination and this journey must be both planned and managed.
Recently, we were asked by a mid-sized retail financial services institution to assist them in constructing the investment proposal for a new customer relationship management (CRM) system. The need for such a system had been identified during the company’s latest IT strategy process. The internal team tasked with developing this proposal had spent the previous four months talking to senior business managers about their requirements and expectations, attending seminars to improve their knowledge in the CRM area, as well doing the usual rounds with vendors and undertaking reference site visits. They had also run a series of workshops with key stakeholder groups within the organizations who would be impacted by the new proposed system. In finalizing their report to the Board, two issues sat uncomfortably with them. First, the calculated return on investment (ROI) was insufficient to financially justify the investment, particularly as the bank was looking for a quick return. Second, from their conversations with management, they knew that one of the central questions that would be posed by the Board was around the certainty of the benefits they had identified actually being realized and they had no real answer to this question.

From our research this team’s predicament is not uncommon. The issues the team faced are similar to those of any proposed IT investment, particularly those for systems that cut right across the organization. After all the hard work of gathering data, conducting interviews and workshops, putting it all together in a way that makes business sense can often prove difficult, particularly in a climate where “value for money” is the watchword. While the information technology (IT) strategy might call for the implementation of a particular application, ensuring that the full business value from this investment is unlocked can be problematic.

Research that we have conducted over the last five years investigating enterprise systems (ES) implementations, as well as a decade long study exploring the process of unlocking business benefits from IT-enabled initiatives, provides valuable insights into addressing the situation painted in the above scenario (see Appendix for an overview of the research base from which this paper draws). The lessons are also valuable in helping not only to assess the likelihood of benefits identified actually being realized but also in building a stronger and more realistic implementation plan, not just for the technology but also for the benefits themselves. We have encountered
many situations where a strong business case has been made for an investment together with a well considered ROI calculation, yet the business benefits sought never actually materialized, despite the fact that the project was delivered on time, within budget and met the technical specification.

The benefits to an organization from IT-enabled change essentially emerge from three causes: either stopping doing activities, doing what has always been done but better (i.e. cheaper and/or faster), or doing completely new things. What our research is signaling is that if organizations are to increase the likelihood of success from their IT investments, they must separate out the different sources of the benefits before developing an implementation plan. Approaches to implementation will differ depending on the nature of the change involved; and changes will inevitably involve people. From our data we have identified two distinct types of IT interventions: problem-based implementation and innovation-based implementation. Both are likely to be present in any large scale IT project, but the impact on employees and other stakeholders will be quite different and the issues that need to be managed will be very dissimilar.

**Understanding the investment context**

A key characteristic of all enterprise systems, such as CRM, enterprise resource planning (ERP) systems, supply chain management (SCM) systems, and e-Government applications is that they transcend the organization in which they are being implemented and affect a large number of organizational departments and processes, as well as external parties, such as customers or suppliers. Their main differences from more traditional IT developments are the ambitious intentions, the complexity of the application and its cross-functional scope, the range of different stakeholders involved and extent of business and organization changes needed to accommodate the new business models inherent in the application.\(^1\) Oh! and the possibility of bringing the business to a grinding halt if it fails!\(^2\)

One lesson from our research is the importance of understanding the business context of the investment being considered. All too often, IT projects quickly become
technology projects, rather than primarily business change projects with an IT component, and the context for the investment is soon forgotten. Returning to the situation which the bank in our introduction faced, it must be remembered that although CRM, as a software solution, is a recent concept, its tenets have been around for some time. Marketers have always promoted building close relationships with customers and providing them with a consistent experience. The requirement to listen to and understand customers and to target them appropriately through segmentation and channel strategies has been touted as significant for many years, but has been difficult to achieve, not least as many companies are organized along product or channel lines as opposed to customer - and legacy IT applications have often reinforced this situation. Similarly, the concept of mass customization has been in the literature for over a decade. However, all have remained essentially theoretical concepts; aspirations rather than either a practical or commercial reality.

Today, due to advances in IT, especially software systems, the promise of one-to-one relationships, effective campaign management, lead generation and opportunity management, customer-value analysis, propensity modeling, customer self-service, automated fulfillment and mass customization are now possible. However, CRM is not a product that can be purchased; it is a discipline, a framework, and integrated approach to managing relationships with customers which require continuous improvement. It is a strategy, not a tactic, and although supported by IT, it will generally involve considerable organizational re-design, often changing the focus and culture of the organization. CRM implementation is not easy and the evidence suggests that many companies are struggling with their efforts.

If we first examine the nature of the investment being made by the bank in our introduction, and particularly its purpose, we can gain some insights as to the “real” problems of illustrating ROI from CRM technology. Cutting through all the arguments that vendors make to promote their products, by investing in a CRM system the bank was ultimately seeking to reduce costs or increase revenue, ideally both. Its strategy called for “adding value through customer service”, increasing customer loyalty and reducing marketing and sales expense. The route to achieving these objectives was seen as through focusing on how it relates to its customers. Improving customer relationships, so the theory goes, is achieved by improving how
the bank deals with them, services their accounts and meets their needs, both financial and otherwise. Healthier relationships would lead to more business being generated from existing customers, a decrease in numbers defecting, with automation reducing the overall cost of servicing customers.

However, to achieve these improved relationships, the bank would first have to get to “know” their customers. The particular bank in question knew, for example, how many accounts were held at its branches but it did not know how many customers it had – customers could hold multiple accounts in different branches. Its credit card division was a separate business, so they did not know if a customer with a checking account also had a credit card. In addition to knowing who their customers were, the bank would also have to gain some insight into its customers in order to better understand their needs and preferences and, if appropriate, to be in a position to tailor its products and services to them. Information could be used to segment the customer base in order to focus marketing and campaign activities as well as help develop channel strategies and in developing and introducing new products. Staff, in both the branches and in the call center would obviously require training to work with this information in their interactions with customers, thereby improving the engagement process. And, of course, there is the not insignificant problem of collecting this information at all points of customer contact whether it was in a call center, through an ATM, over the Internet via a customer portal, or in a branch.

Now, if we examine closely what the bank is attempting to do, in business terms, we can see that it is clearly not something that is synonymous with the “quick return” it was seeking. There are two issues that are of key concern here: building relationships with customers and the related issue of increasing its understanding and knowledge of customers.

The first point to note is that building relationships with customers is a process not a point concept. And, whether the bank likes it or not, the power in the relationship ultimately lies with the customer and if they are unhappy with the products or level of service they receive, they are very likely to take their business elsewhere. The nature of the relationship is therefore assessed by the customer based on their experiences in dealing with the bank. Repeated positive experiences generally lead to a closer
relationship and increased loyalty and ultimately generate more business.\textsuperscript{10} However, by definition, such experiences occur over an extended period of time as the customer and the bank interact with each other – not just weeks but often years – although one bad experience could effectively ruin the relationship for ever. Consequently, seeking a quick payback is inconsistent with the process of building customer relationships.

The second issue of improving its understanding of customers requires information. This information is used to obtain a more comprehensive picture of individual customers and will probably involve developing propensity models and building customer value models. But again, the required information is collected over an extended period of time – no CRM system comes with a database pre-loaded full of customer information. Populating the customer database depends on this information not only being provided by the customer and also on it being actually collected and accurately recorded. Sometimes basic customer information can be extracted from legacy systems but it is often inaccurate or incomplete as many legacy systems were designed to process transactions or administer products or accounts not capture customer information. The more information collected the better the insights, assuming of course that the “correct” information is gathered. And \textit{more} in this instance generally means a protracted time period is required. Of course, all this assumes that the organization actually has the ability to glean new insights from the data and our analysis would suggest that this is often not the case.\textsuperscript{11} This ability to work with information is a crucial aspect of achieving business value.\textsuperscript{12}

On a more positive note, operational benefits, particularly process efficiencies and cost savings, generally emerge more rapidly. Responding quickly to customer requests and queries can improve effectiveness as well as contributing to overall customer satisfaction. One Dutch insurance company we studied justified its entire CRM investment based solely on the savings that would be made in its personal injury claims processing. Systems costs can also be reduced by replacing legacy systems which tend to have a high maintenance cost associated with them. New technologies also tend to be more flexible, opening up future options.\textsuperscript{13}

Self-service customer portals can also decrease service costs while improving customer responsiveness. Providing front-line staff with access to customer
information direct from their workstation not only improves responsiveness to requests and the quality of their interaction with customers but also means that the search for information in legacy systems becomes a thing of the past, thereby improving efficiencies. This can also improve employee satisfaction and the impact of this on service quality can be significant.\textsuperscript{14}

As with any IT investment, benefits from implementing CRM software are only likely to emerge if organizational processes are redesigned. This task of reengineering business processes should not be underestimated – and it often is in many ES implementation. The resultant change in work practices that usually accompanies any redesign can result in staff resistance if not managed appropriately.\textsuperscript{15} Many CRM projects fail to deliver the return expected due to their failure to manage any transition required. For example, in retail financial services, staff at most institutions have traditionally serviced accounts or policies not customers, and indeed their legacy systems not only reflect this but also promote behavior which is often at odds with building customer relationships. Front-line staff must also understand why it is important to accurately capture all customer contact information. If they don’t it could undermine the very information base underpinning the CRM initiative – ‘garbage in, garbage out’ really does hold true. Staff must also have confidence in the system so that if the system prompts them to recommend a particular product to a customer that they believe that there is a strong likelihood that the customer might be interested.

\textbf{A model for successful ES implementation}

As mentioned earlier, CRM initiatives are currently one of the most common types of enterprise systems implementation, and like most ES investments, are major organizational change programs, due to their scope and potential business impact. Also, like many other ES projects, soon after their initiation many CRM implementations default to become ‘software projects’. In one survey of ERP projects, 89% were judged successful – the software worked and the project was delivered close to time and cost forecasts. But only 25% had achieved the intended business benefits.\textsuperscript{16} The example in Table 1 captures the main reasons for this from
the experience of one manufacturing organization. The organization concerned implemented an ES package, from the same vendor, twice! The first time was unsuccessful, but they realized why and had the courage to try again and this time they succeeded in delivering the expected business benefits.

**TABLE 1** Implementing enterprise systems – one company’s experience.

<table>
<thead>
<tr>
<th>FIRST ATTEMPT - FAILURE</th>
<th>SECOND ATTEMPT - SUCCESS</th>
</tr>
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<tbody>
<tr>
<td>Led by the IT function, with insufficient knowledge of the business functions concerned. Little involvement of business areas in project</td>
<td>Business function led, by a newly recruited manager, experienced in the business area, supported by IT function</td>
</tr>
<tr>
<td>Belief that the requirements were simple and already known - just use the package to automate current processes</td>
<td>Site visits and reviews of other companies’ procedures to establish best practice and system requirements</td>
</tr>
<tr>
<td>Belief that this was a low-risk and straightforward implementation</td>
<td>Knowledge that this would require some major changes</td>
</tr>
<tr>
<td>Lack of business buy-in led to both the new and old (mainly manual) system remaining in place, and little move by the business to adopt the new system</td>
<td>New procedures completely replaced the previous system and all staff were required to use them; facilities for the old system withdrawn</td>
</tr>
<tr>
<td>Little business or process change: overlaid existing ways of working with the ES – vendor stressed that the flexibility of the package meant that any changes could be made in the future</td>
<td>Organizational and business process changes identified and managed from the outset</td>
</tr>
<tr>
<td>Bespoke amendment of package. Longer and more complex system build, and difficulty applying upgrades</td>
<td>Minimal changes to the package, and innovative use of built-in facilities. Shorter delivery timescale and easier future upgrade paths</td>
</tr>
<tr>
<td>Costs, no benefits</td>
<td>Benefits have exceeded expectations</td>
</tr>
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</table>

This company’s experience is not unusual – many organizations are re-implementing such systems to gain the benefits sought that were not achieved the first time. For example, a major pharmaceutical company implemented an ES worldwide in the 1990s across all its manufacturing units, but allowed considerable degrees of freedom to each unit in how it ‘customized’ and utilized the package. As a result the major supply chain benefits that were expected did not accrue. The re-implementation is more standardized and requires the units to change their practices to improve the performance and agility of the supply chains for all the main products.

From our research we have observed different views that capture the realities and subsequent outcomes of ES implementation. The first is where implementation is seen as a relatively straightforward and low risk process that can be planned and executed, without incurring significant business or organizational changes. As exemplified in
Table 1, research illustrates that this rarely is the case and is a rather naive view of what is a complex process. When a management team subscribes to this perspective, the chance of the implementation being a success is often severely compromised due to unrealistic appreciation of the issues involved. All too often, existing business problems, constraints and management and organizational issues can cause implementation to spiral out of control, leading to large time and cost overruns and to few, if any, benefits being realized. Ambition does not match the organization’s ability to manage the changes associated with the project. The approach followed by the majority of those organizations we have studied, that have been most successful with their ES implementations, is depicted in Figure 1.

![Figure 1](image)

**Figure 1** A model of most successful approach to enterprise system implementation.

Success often results from a two-phase approach to implementation that acknowledges the distinction between problem-based and innovation-based intervention objectives. The first phase of implementation involves creating a coherent link between the future business vision and how the ES either shapes that vision or enables it to happen. Not surprisingly, the vision is often created by the vendor. Through brochures and glitzy presentations they describe the idealized future, without any due recognition of where the organization is coming from or what is involved in achieving it. The organization then buys into this vision, believing that it can purchase the path to getting there. With this conviction, the likelihood of success is already compromised. Vendors and consultants do have a role, but it is important that the vision is shaped and owned by the management team and that they have bought into its achievement. Unfortunately, in many cases, that vision often ignores or
downplays current problems and constraints that limit the organization’s ability to implement the system successfully.

Our research suggests that a more appropriate approach to this first phase is to establish an overall vision for how the business will operate once the full benefits of the system can be realized, but set an initial intent that delivers a ‘new baseline’ where problems and constraints have been removed. The first phase of the implementation should then deliver this new baseline, often via a basic, even limited, standard (or ‘vanilla’) implementation of the software with associated essential business process and practice changes. Indeed, studies\(^\text{19}\) show that business performance often deteriorates immediately after implementation and contingencies to allow for this are needed – increased inventories, more resources, and informing trading partners of expectations. The second phase of the implementation is focused on innovation in selected processes and activities. This is where opportunities for competitive advantage through IT are identified or where new strategic options open up for the organization through innovation. It is crucial to recognize this distinction between problem-based and innovation-based interventions in planning and implementing ES.

**The ‘ends, ways and means’ views of IT implementation\(^\text{20}\)**

At the start of any IT investment, objectives or targets are set for the performance improvements that are expected to be achieved, from the combination of IT functionality and the business changes that are required to use the new system effectively. These improvement targets or ‘ends’, then form the basis of the business case and calculation of a Return on Investment (ROI) to justify the costs involved. This approach is appropriate when the intervention is ‘problem–driven’, since the benefits that should result from the removal of known problems through the new IT ‘means’ and improved ‘ways’ of conducting business processes and activities, can usually be identified and quantified. The main challenge is to agree the best combination of ‘ways’ and ‘means’ of achieving them.

However, it is often more difficult to specify the ‘ends’ that will be achieved from innovation-based interventions, due to the uncertainties about whether the new IT
functionality and business changes can be successfully implemented, and also the benefits that those changes will actually deliver. The business value realized from innovation-based interventions will depend on the ability of the organization to identify, create and successfully implement, advantageous new ‘ways’ of conducting business. This implies that the investment objectives and scope may well change during the implementation process, as the organization learns more about what can be achieved and how. A potential issue with innovation-based interventions is that too much attention is paid to what the IT ‘can do’, i.e. the ‘means’, rather than the changes the organization has to, or could make, to exploit fully the capabilities of the technology.

Thus, with problem-based or ‘ends driven’ implementations – i.e. focused on the end result – the organization is primarily investing in IT to improve performance in order to:

- overcome an existing disadvantage against competitors
- prevent performance deteriorating in the future to a level that would be a disadvantage
- achieve stated business targets
- remove constraints that are preventing opportunities being taken.

Examples of problem-based interventions include: integrating customer data to provide a single point of contact for customer enquiries, implementing an ERP system to remove reconciliation problems between production and finance, providing employee self-service applications via a portal to reduce administration and purchasing costs, and providing lap-tops to sales people to ensure the accuracy of customer quotations.

With innovation-based, or ‘ways and means’ driven interventions, the organization is investing in IT to exploit a business opportunity or to create potential competitive opportunities or new organizational capabilities by:

- doing something new involving using IT
• doing something in a new way using IT
• using new IT to do something it could not do before.

In all these situations, the innovation is dependent on combination of the technology, the organization’s technical expertise and the ability of the organization to change in order to make effective use of the capabilities.\textsuperscript{21} Examples include: creating an on-line sales channel to reach new customers, introducing vendor managed inventory for key suppliers, allowing customers to do self-billing, deploying a data warehouse and analytics to automate operational decision making, and introducing mobile technologies for professionals to work on-line during client engagements.

The overall logic and rationale of the model of implementation depicted in Figure 1 is as follows:

1. \textbf{Reconcile logic of ES with future business vision}

At the start of the initiative the main issue is to be sure \textit{how} the ‘vision’ of the ES implementation fits with the future business vision, with a clear understanding of \textit{how} the ES implementation contributes to realizing the vision. There are two extreme possibilities in relation to the ES:

a. The implementation of the ES will provide the new business model on which the vision is based – this generally implies major business and organizational changes are needed.

b. The business model to achieve the vision is known and the ES is required to make it operational – implying that there will be trade-offs between the ideal model and the business model embedded in the logic of the ES software.

While most implementations are likely to be a mixture of these two possibilities, clarity is needed concerning where the ES business model and associated functionality will drive organizational changes and identifying those areas where the organization’s business model cannot be compromised, perhaps due to the market advantage that it provides. A cause of some ES implementation failures is
that the business model is not understood and the organization adopts processes and systems which do not fit the business model. This will tend to produce changes to the ES software during the implementation in order to reproduce the old business model.

Issues at this stage that need to be resolved involve the current and future business model and how well the ES business model fits with both. Unfortunately, often “the devil is in the detail,” and the current business problems and constraints to achieving the ES vision are overlooked. It is therefore likely that there will be a major disconnect between the strategic intent of a decision to implement the system and the resulting actions that must be completed. One UK bank where we conducted research had difficulty in getting branch staff involved in defining requirements during their CRM project. Senior management’s vision of the project was built around customer retention and cross-selling. Branch staff, on the other hand, just wanted a system to process transactions speedily and to get the customer out of the branches as quickly as possible, to please the customer and reduce the queue. Getting appropriate engagement and buy-in proved difficult and the progress of the project labored at times. Yet, after the system had been up-and-running for a year, staff began to see what was possible and became very proactive in making suggestions for further development. As the CRM program manager said, “it has been a learning experience for everyone involved.”

2. Establish initial ES vision and intent

As planning commences, the problems to be resolved and constraints to be overcome become more apparent and the intent of the implementation has to be scaled back to become ‘a new baseline’, where the existing problems and inhibitors to more innovative change have to be removed. This reflects the findings of others that it is difficult to operationalize a new vision when surrounded by current problems. Equally, different stakeholder groups will be at different stages of development in terms of the capabilities of their existing systems. Those comfortable with existing systems will have a different perspective on the need for and nature of the changes required, compared with those with poor systems who have much to gain simply by replacement of old systems to remove existing problems. How these stakeholders resolve such issues is considered later, but our
data indicates that the compromise usually errs on the side of bringing the weaker areas up to the new baseline and deferring the riskier and more innovative changes.

Another key issue to consider is clarity with the need for and benefits of systems integration, where again different stakeholders have more to gain or lose from the proposed change. Compromises made often postpone changes to take advantage of integration of systems and processes. Aspects which should determine the extent of any compromise to reduce change complexity or the reassertion of the need for one off major change are discussed above in points 1a and 1b. If the ES itself is the source of the required business model, compromises to reduce the intent due to current constraints and problems may well lead to complete failure of the investment. If the situation is as in 1b, then compromises at this stage may be essential if the organization is going to achieve changes successfully, even if it takes two steps.

3. Implementation

Problem driven implementation is actually easier to manage than creating innovation through IT, where more is uncertain and existing knowledge is usually inadequate. It is also easier to measure the success: even if the benefits are more limited they are probably visible soon after implementation. Again, the ability to measure the benefits may reduce the ambition to those that can easily be identified, agreed on and quantified. However, such a compromise may well lead to overall disappointment that so much expense and time was needed to achieve (apparently) so little. The benefits achieved by problem removal rarely justify the expense of an ES: it is therefore important that the new base line is achieved as quickly as possible to enable the more strategic value from the ES to be realized.

In the “worst case” the compromises are so severe that few, if any, business changes are made, so that the organization has essentially the same processes with underpinning systems running on different software. Of course problems are compounded if the software has been amended to become a unique version, rather than changing business practices.
4. Shakedown

With any ES implementation there is inevitably some form of “shakedown” phase, which may involve resolving serious problems if business performance has been adversely affected, or merely tuning the system and business processes to achieve the expected performance levels. Any implementation should anticipate and plan for this stage, ensuring resources and procedures are in place to deal with the consequences of implementation. We have already noted that research indicates that performance usually dips immediately after implementation. Once the ‘baseline’ benefits have been delivered, the organization will then have to define a revised intent for the ES, in terms of future business change (and further ES investment if necessary), to deliver new business options available following systems and process integration and/or having common systems across business units. In many cases no further action may be taken for some time and any change-benefits available are postponed or even forgone. In our research, 50% of organizations who implemented an ES as part of their Y2K strategy waited 1-2 years before ‘re-implementing’ to obtain more comprehensive benefits.

During this shakedown phase, a clear understanding must be established of

- how to optimize performance through further changes to business processes and practices and software re-configuration, and
- how further benefits can now be achieved by using more capabilities of the software and by more radical or extensive business and organizational changes.

This shakedown phase is a pivotal time during the life of any ES project, and is considered in detail in the following section. It is during this phase that the risk of the project spiraling out of control – either resulting in it being abandoned altogether or taking on a life of its own, soaking up cash but failing to deliver any benefit of significance to the organization. Our evidence indicates that performance improvement during this shakedown phase arises from a number of sources:
• Internal rationalization of current information improving its quality. Essentially this is an information management activity (i.e., IT support for better information management)
• Integration of internal processes and changes to external processes, whether through the creation of new processes or the redesign of current processes

5. Onwards and upwards
Having established a new or revised intent in relation to the business vision, which may have changed during the period of implementation, a new stage of planning and implementation, often in smaller steps, focused on specific business processes can be carried out. This ‘onwards and upward’ stage, being more innovative, and requiring more business change, is only really feasible in discrete steps, if business risks are to be avoided. It is important that organizational knowledge gained during the first, often large scale implementation, is retained and transferred to this second phase.

Avoiding a protracted and difficult shakedown phase
Implementing an ES is a business transformation program, not merely a technical project. Very few fail because of the inadequacies of the technology. When they do fail the reasons are organizational and in many cases due to different perceptions of the intent and benefits and extent of changes required, between senior executives and operational line management and amongst the line managers in different functions or units. Our research suggests that that successful implementations have been carefully, even slowly, planned to gain the understanding and commitment of the majority, if not all, the stakeholders to the benefits and establish how best to implement the changes in each area, followed by rapid implementation. Often, two-thirds of the project duration was effectively ‘planning’ and one-third was implementation. Many failures resulted from a short planning phase, during which few of the differences in perceptions across stakeholder groups were addressed or reconciled – a point we shall shortly address – followed by an interminable implementation phase! Table 2 contains
a summary of some of the particular key issues that need to be addressed in relation to ES.

**TABLE 2 Key issues in ES implementation.**

- To succeed business models will have to change and so will business and organizational relationships
- It is the business changes enabled by the ES application that produce the major, and lasting business benefits
- There must be explicitly identified benefits both to the corporation and to most, if not all, the units/functions involved, to enable the business changes to be made - but implementing a ES system will rarely deliver sufficient immediate benefits to justify the cost and effort. Exploiting the new capability will deliver further benefits
- Corporate IT initiatives are often distrusted by the business units or functions due to perception of increased centralized control and loss of autonomy
- The technology is rarely the cause of failure, it is normally the result of organizational issues being unresolved or a poor implementation process
- ES projects often have an imposed deadline which can seriously impact the likelihood of success. Figure out the requirements of the project first, then determine how long it is likely to accomplish them
- Poorly defined or ineffectively communicated business vision and strategy will reduce the ES project to a technology project only, owned by the IT function
- Most organizations realize (after the event!) that more resources and expertise should have been devoted to managing the changes.

Successful ES implementations involve the management of many diverse interest groups and the adoption of different approaches to the management of project activities and business changes. The different interest or stakeholder groups are unlikely to be fixed in their views about what they want and what the ES project can deliver. In reality, people’s views tend to change as they learn more about the nature of change and how the change affects them and other people.

**Understanding and addressing the different perspectives that influence an ES implementation**

Within organizations, individuals’ attitudes and perceptions tend to be influenced by four factors:
Roles and responsibilities

As a person moves, for example, from middle to senior management role, he/she will need to pay attention to different problems, information and people when framing problems and making decisions.

Information asymmetry

Employees have access to different sources of information about change projects and consequently, must form their views about a planned change using information of varying completeness, accuracy and reliability. Never mistake resistance for ignorance that results from lack of communication.

Professional background

Inevitably, professional background and expertise have a major bearing on how individuals perceived change. An IT professional, for example, will appreciate an IT project’s technical complexity more than a typical accountant or HR manager.

Personal interests

The impacts of a project on personal interests will also affect how the individual perceives a change process. A software engineer, for example, may see a project as an opportunity to develop marketable skills and, consequently, argue in favor of using novel hardware and software.

These factors, combined with group interests, can result in both individuals and groups having different views of how a project will affect the organization during and after implementation. From a change management perspective, it is particularly important to understand how these factors affect people’s perceptions of the resource demands a project will place on the organization and the change effort required for successful implementation.
Typically, planning of an enterprise systems project often occurs ‘top-down’. Senior management identifies business problems or opportunities they believe will be addressed by an enterprise system. A program or project manager is then appointed to plan and implement an ES project. Finally, line managers and end-users are consulted regarding the design and roll-out of ES components in their business areas.

**Figure 2** Diverse perspectives of stakeholders: reaching consensus.

In the majority of cases, this top-down approach proves unsatisfactory and project managers find themselves under considerable pressure to complete implementation rapidly, whilst also receiving demands from users for systems changes and encountering many obstacles to the realization of the strategic ideal of business and organizational integration. The results are illustrated in terms of their contrasting perception of resource demands and the required change effort in Figure 2 – assuming that we have the necessary 20/20 hindsight before a project begins and there are only three stakeholder groups, in reality there is likely to be many more.

*Senior managers* typically have two key concerns: financial performance and ensuring the business will be competitive for the future. They also have limited exposure to the complexities of day-to-day operations. Consequently, they tend to focus on keeping costs and resource usage to a minimum, whilst having limited understanding of the practical barriers to translating their high-level strategic change plans into reality.
Project managers appreciate the complexity of large change projects and are more aware of the uncertainty surrounding implementation. As they expect to encounter unforeseen difficulties, they will tend to overestimate resource demands, to give themselves margin for error and build in some slack. Depending on the professional background of the project manager, his/her initial estimate of the change effort is likely to be relatively low, as project managers will probably not be fully aware of the practical constraints on project implementation, particularly around the people issues.26

Line managers are very familiar with their part of day-to-day operations. Their time is consumed ensuring the business runs smoothly and tackling operational problems as they arise. Any attempts to change operational processes are likely to be seen as increasing their already heavy workload, as well as introducing operational risks. Hence, they often see large change programs, such as ES implementations, as requiring a considerable change effort. However, they usually have little knowledge of the costs of buying, implementing and operating new information systems until they are made explicit.

These differences in roles, professional expertise and personal agendas are likely to cause senior, project and line managers to have very different perception of ES projects. Even among their ranks, their may be diverse perspectives. The top down approach to defining ES change places the project manager in a difficult position, being pulled in different directions by different individuals and interest groups. These differences can make it almost impossible for a project manager to implement a change project without encountering significant opposition, which is extremely difficult to resolve.

The introduction of new IT systems can provoke different behaviors depending on its impact on different groups and can exacerbate existing behaviors. In essence, the behaviors with respect to IT tend to fall into one of three modes:27

- **Rational** – all stakeholders subscribe to the same organizational goals and focus on achieving those goals through effective and efficient use of IT.
• **Trust** – a willingness of (some) stakeholders to act in concert to ensure mutually supported goals can be achieved through IT without serious detriment to any stakeholder interest.

• **Self-interest** – stakeholders pursue their personal agendas/interests and use IT to protect their positions, often constraining the organizational use or even undermining it.

It is important in an ES implementation to recognize that all three of these modes will exist, probably concurrently, amongst the stakeholders. Whilst senior management are more likely to subscribe collectively to the rational view, they have to accept that there will be those who have vested interests to protect and also that existing relationships amongst some stakeholders are a source of power for either beneficial change or resistance. Existing relationships are likely to be the result of the existing business model, hence the extent of change to the business model caused by the ES is an important consideration – the less change the more existing relationships are a positive attribute and visa versa.

Each stakeholder, whether an individual, group or a whole business unit, also needs to be considered in terms of the extent to which they perceive the project producing benefits for them, relative to the amount of change they will have to undergo or endure before the benefits are likely to accrue. Some form of resistance can be expected if they perceive the changes outweigh the benefits or if stakeholders have to endure significant change for no direct benefit. That resistance could cause major project risks. Based on the current positioning of each stakeholder and the required level of resources or support they are needed to provide, an action plan to move their perceptions or deal with their concerns can usually be devised. However, in some cases the gap may be too great and the ambitions for the project should be reduced to enable at least some of the benefits to be realized. Whether substantial additional action is justified or it is better to reduce the investment scope, depends on the number and value of the particular benefits that the stakeholder ‘resistance’ may affect.
It is during the shakedown phase that the impact of changes, shaped and enabled by the IT system on roles and relationships, become apparent. New process designs will inevitably mean changes in work practices and the roles of employees. The consequences and acceptance of these changes dictates the outcome of the shakedown phase. Similarly, new relationships are created and established ones disbanded. New roles and relationship have an inevitable impact on intra-organizational coordination. These new roles and relationships are often pre-requisites for generating the new thinking essential for innovation, whereas the knowledge required to resolve known problems normally exists in current relationships.

If significant change to the existing business model is required, new trusting stakeholder relationships need to be formed early in the project, based on the business model envisaged. Otherwise, it is likely that as existing relationships and trust are broken up by the anticipated changes, all the stakeholders revert to self protection and self-interest becomes the dominant behavior. It must be recognized that stakeholders exist as individuals, structured groups, departments, communities of interest, etc., and that there are inter-relationships amongst stakeholders and stakeholder groups that can either be a major enabler or inhibitor of an ES implementation. In relation to two stage approach to implementation, introduced earlier, our research suggests (see Figure 3):

- At the start of the planning stage an overall rational view of the business and ES models and benefits expected should be behind the process (position ‘a’ in Figure 3) but more detailed planning will normally be affected by existing trust and relationships amongst stakeholders. What must be avoided is a rapid descent into self-interest when individual stakeholders will defend the status quo, normally by adding to the “constraints” (position ‘b’ in Figure 3).

- Whilst the rationale for any changes must be reinforced throughout the project by re-iteration of the benefits, the implementation of the changes will, to a large extent, inevitably be localized. There will be trade-offs made to balance local and shared interests, based on the relationships amongst the different stakeholder groups.
Following implementation, the duration and issues encountered in the shakedown phase will be partly dependent on how each stakeholder group has fared in terms of actual and perceived benefits in relation to the changes undergone and any disbenefits that have emerged. If the implementation has not gone well there is likely to be a period of self protection and loss of trust, as relationships are stressed. The stakeholders at the ‘sharp-end’ where the business operations can suffer most, if the new system “doesn’t work”, are likely to be the most protective, to avoid bringing the business “to its knees” for a period (position ‘c’ in Figure 3).

Before the onward and upwards innovation stage can proceed, not only does a new rationale for the future vision have to be in place but also:

- new relationships and trust amongst key stakeholder groups need to be in place to operationalize the future vision, and
- protective behaviors based on local interests need to have ceased, either through attention to the specific issues causing the behavior during the shakedown phase or by other compensatory changes to mitigate the negative effects (position ‘d’ in Figure 3).

**Figure 3** ES implementation and changing organizational modes.
While all these attitudes will probably exist at the start of the project, how the project is set up in terms of leadership and involvement will have a significant influence on how behaviors evolve. The changes that produce the ES benefits inevitably lead to greater interdependence of business activities by removing the (logically) unnecessary reconciliation and control activities across process and functional boundaries and require single sources of information to be used. The clarity of the business case for the ES, in both operational and strategic terms – i.e. how rational it is – is critical to achieving buy-in both collectively and individually by key stakeholders. However, given the trade-offs that will inevitably be required between different groups in terms of changes and benefits, the degree of trust in existing organizational relationships must be maintained and utilized in defining how the first phase of the implementation will be achieved.

**The two phase approach – implications for the Return on Investment (ROI) curve**

The benefits of an ES do not come all at once when the system goes “live” – we have already noted that performances often dips in the early days and months. The nature of the benefits available will vary over the life of the project. For example, our analysis indicates that the return on investment (ROI) curve for CRM shows little return in the early days of the investment. However, over a period of several years, through increasing customer insight and improving relationships, the payback can be significant. We recommend that this curve should be considered in putting together any investment proposal for any ES.

Figure 4 illustrates the generic profile of the curve for a CRM implementation – it will vary from organization to organization, influenced not least because of their differing starting positions. In the early days and months of the program, benefits are likely to be as a result of solving current problems, generally improving efficiencies and improving information quality. For example, in an insurance company we studied mobile sales agents were an important distribution channel but were acting as an information sieve. The agents had direct access to a rich source of customer details, but neglected to communicate much of this information to the head-quarters, call
center and other back-office functions. A promise from them to deliver more information on a product or fresh leads generated while with a client was often forgotten, as there was not a mechanism in place to capture and route this information to appropriate departments. However, through the implementation of sales force automation, the sales force could share information with others in the organization, solving a problem that had long plagued them. They have now created a revised vision for CRM that is more innovation-based and focusing more on the customer rather than on solving an organizational problem.

FIGURE 4 The return on investment curve: an example from a CRM implementation.

Once current problems have been addressed, innovation-based activity can be undertaken and these can result in significant returns. For example, with improvements in customer information, market segmentation can be improved, propensity to purchasing modeling undertaken and marketing activity more focused. One UK bank saw its response rates for marketing campaigns increase from 2% to more than 40% - but this was 3 years after it first begun its CRM initiative. It put this down to greater customer insight.

These arguments call into question the figures that are continually thrown around regarding the failure rate of CRM. For example, industry analysts Gartner calculate that 65% of CRM projects failed in 2001. In assessing such findings it is important to consider the timeframe over which the so-called “failed” projects are being assessed. It might just be that within a short time-scale the expected benefits were not delivered – from the arguments above, the question is, how could they be?
One particular life assurance company assessed its CRM implementation to be a moderate success when it first introduced it five years ago, and indeed at one stage considered replacing it. A post-implementation ROI analysis indicated that the investment was showing little return compared to the figures in the investment proposal. Recently, however, they were voted ‘best company to deal with’ in a countrywide survey of brokers, its principal channel to market. Income has increased threefold over the last two years and the level of expense incurred to service this business has also reduced dramatically. Further evidence is provided by the Britannia Building Society, who in 2002 scooped an award for best CRM implementation in financial services. While it is now receiving accolades, the Society in fact began its CRM initiative back in 1995.\(^{32}\)

**Realizing value: a journey not a destination**

Returning to the issues faced by the bank, as outlined in the beginning of this paper, they must recognize that CRM is a long-term investment in both business and technical terms. It is not only about building a customer knowledge base for the organization to exploit. It is also about building listening and responding mechanisms and sharing some of the value derived from that information with the customer. Often, its success depends on customers changing their behaviors. In short, expecting a quick payback is inconsistent with the requirements necessary for successfully building relationships with customers. The investment must therefore be assessed in this light; unfortunately few are. It may be that conventional approaches to calculating ROI are inappropriate in expressing expected returns and providing the justification for investments in IT, but that’s another issue altogether.

In addition, organizations must continually work to achieve any benefits identified and this requires the active engagement and involvement of both business management and users. This will require the construction of a benefits realization plan, detailing the source of the benefits, responsibilities making changes, as well as timescales for achievements.\(^{33}\) The evidence from our research is that an ES
implementation is, in essence, a significant organizational change initiative and that any such intervention is best viewed as a two phase process, which emphasizes the critical importance of managing through the “shakedown” phase of the project. Approaches to implementation will differ depending on whether the intervention is problem-based or innovation-based. Failure to recognize this distinction may mean that any value realized will be sub-optimal. And, of course, realizing value is a journey not a destination.
Appendix: About the Research

This paper is based on three related research projects conducted at the Information Systems Research Centre at Cranfield School of Management.

The first is a longitudinal study that has explored how organizations can unlock business benefits and value from their investments in IT. The researchers worked with companies including Alliance & Leicester, AstraZeneca, The NatWest Bank, GlaxoSmithKline, British Energy, and British Telecom. The key findings of the study can be found in John Ward and Joe Peppard, *Strategic Planning for Information Systems*, 3rd Edition, (John Wiley and Sons, Chichester, 2002) and John Ward and Elizabeth Daniel, *Benefits Management: Realizing Value from IS and IT Investments*, (John Wiley and Sons, Chichester, 2005).

The second is a study of CRM projects in a variety of different organizations. Case studies were undertaken in 15 companies: Canada Life, Orange, Derbyshire Building Society, Britannia Building Society, The NatWest Bank, Friends First, Homebase, Reaal Particulier, Electrocomponents, Siemens, Nortel Networks, Sears, Roebuck and Company, Aserta Homes, Wesleyan Assurance Society, and Sun Microsystems. The findings of this study have been published in Simon Knox, Stan Maklan, Adrian Payne, Joe Peppard and Lynette Ryals, *Customer Relationship Management: Perspectives from the Marketplace* (Butterworth-Heinemann, Oxford, 2003).

The third project is a study of the particular change and organizational issues associated with the successful deployment of enterprise systems. The scope of the project included all types of enterprise wide systems. In-depth case studies were undertaken in AstraZeneca, Qinetiq (formerly the UK’s Defense Establishment Research Agency), Electrocomponents and Mitel. The findings are published in J. Ward, C. Hemingway and E. Daniel, “A framework for addressing the organizational issues of enterprise system implementation”, *Journal of Strategic Information Systems*, in print, 2005.
Endnotes

1 This business model is the business logic that is embedded in the software.

2 Over the years there have been a number of high profile cases involving organizations claiming that their ES severely impacted their business. On occasions, the impact was so detrimental that a number of organisations even filed for bankruptcy. For example, FoxMeyer Drug, a $5 billion wholesale drug company filed for chapter 11, at least in part because of problems with its ERP implementation. Avis Europe took an exceptional charge of £40-45 million related to its decision to scrap its deployment of a new ERP system due to cost over runs and delays. See J. Scott, “The FoxMeyer drugs’ bankruptcy: is it a failure of ERP?” in Proceedings of the Association of Information Systems Fifth Americas Conference on Information Systems, Milwaukee, WI (August, 1999); and “Avis Europe is latest to get stung by IT”, Computer Weekly 25th Oct (2004).

3 See L. Markus “Technochange management: using IT to drive organizational change”, Journal of Information Technology, 19/1 (2004): 4-20; and R. Kohli and S. Devaraj, “Realizing the business value of information technology investments: an organizational process”, MIS Quarterly Executive, 3/1 (2004): 53-68. Davenport noted that “[s]uccessful implementation of ES does involve probably the greatest technological change most organizations have ever undergone. … Even more difficult and important, however, are the major changes in business that come with an ES project” (p. 5-6). See T.H. Davenport, Mission Critical: Realizing the Promise of Enterprise Systems, (Harvard Business School Press, Boston, MA, 2000). In relation to Nestlé USA experience with ES, Chief Information Officer Jeri Dunn is recently quoted as saying “no major software implementation is really about software”, CIO Magazine, 15 May (2002).


21 This has been referred to as ‘technochange’. See L. Markus “Technochange management: using IT to drive organizational change”, *Journal of Information Technology*, 19/1 (2004): 4-20.


A similar observation was made by Markus regarding the training and education of project managers. See L. Markus ‘Technochange management: using IT to drive organizational change’, *Journal of Information Technology*, 19/1 (2004): 4-20

This assessment is based on the work of Kumar et al. While the literature identified two extreme modes of behaviour, rationalism and segmented institutionalism, they identified relationships and trust. This accepts that different stakeholders will have different interests but some existing relationships of mutual trust amongst stakeholders enables some agreement to be reached within a rational overall approach. See K. Kumar, H.G. van Dissel, P. and Bielli, “The merchant of Prato – revisited: toward a third rationality of information systems”, *MIS Quarterly*, 22/2 (1998): 199-226.

It is not the intention of this paper to discuss risk analysis. In a recent paper, Gibson identified three factors determining business change risk: leadership of the change; employees’ perspectives on the change, and scope and urgency of the change. See C.F. Gibson, “IT enabled change: an approach to understanding and managing risk”, *MIS Quarterly Executive*, 2/2 (2003): 104-115.


This has been referred to as the IT value latency problem. See K. H. Goh and R.J. Kauffman, “Towards a theory of value latency for IT investments”, Paper presented at the 38th *Hawaii International Conference on Systems Science*, January, 2005.


For an approach to benefits realization planning, see J. Ward and E. Daniel, ‘Benefits Management: Realizing Value from IS and IT Investments’, (John Wiley and Sons, Chichester,2005).