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Wilson, Hugh; Daniel, Elizabeth and McDonald, Malcolm (2002). Factors for success in customer relationship management (CRM) systems. *Journal of Marketing Management*, 18(1) pp. 193–219.

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Version: Accepted Manuscript

Link(s) to article on publisher's website:
<http://dx.doi.org/doi:10.1362/0267257022775918>

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In print for Journal of Marketing Management, vol 17 (2001)

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Abstract

The importance of effective customer relationships as a key to customer value and hence shareholder value is widely emphasised. In order to enhance these relationships, the application of IT to marketing through customer relationship management (CRM) software, e-commerce and other initiatives is growing rapidly. This study examines the factors that influence the successful deployment of CRM applications, with particular emphasis on those factors which are distinct from other areas of application. Using the analytic induction method, success factors were derived from five in-depth case studies. Resulting factors underemphasised in previous literature include: the need for project approval procedures which allow for uncertainty; the need to leverage models of best practice; the importance of prototyping new processes, not just IT; and the need to manage for the delivery of the intended benefits, rather than just implementing the original specification.

Biographies

Dr Hugh Wilson is a Visiting Fellow and Director of the Centre for e-Marketing at Cranfield School of Management. After a mathematics degree at Oxford University and a postgraduate computer science degree at Cambridge University, he spent thirteen years in the computing industry, before gaining a prize-winning PhD from Cranfield University on decision support systems for marketing planning. He has published in British Journal of Management, Journal of Marketing Management and Journal of Marketing Strategy amongst others. Books and management reports include “e-Marketing: Improving Marketing Effectiveness in a Digital World” (Financial Times/Prentice Hall 1999).

Dr Elizabeth Daniel is a Senior Research Fellow in the Information Systems Research Centre at Cranfield School of Management. Prior to joining Cranfield she spent two years at City University Business School and before that, ten years in industry. Her research interests are in the area of electronic commerce, particularly banking and retailing over the Internet, the subject of papers published in the European Management Journal, Long Range Planning, the International Journal of Bank Marketing and elsewhere. She is directing a research project at Cranfield entitled Effective Strategies for Electronic Commerce.

Malcolm McDonald is Professor of Marketing Strategy and Deputy Director at Cranfield School of Management. He has extensive industrial experience, including a number of years as Marketing Director of Canada Dry. He has written thirty-one books, including the bestseller “Marketing plans: How to prepare them, how to use them”, and has published widely.

Factors for success in customer relationship management (CRM) systems

THE ARGUMENT FOR CRM SYSTEMS

Ever since the influential study by Reichheld and Sasser (1990), which showed the large impact on profitability of small increases in customer retention rates, the marketing community has been more conscious of the need to manage customer relationships in the long term as well as prior to the first sale. The argument has been further strengthened by data on the low cost of better retention as compared with better acquisition (Blattberg and Deighton 1996, Filiatrault and Lapierre 1997) and the increasing profitability of customers the longer the relationship lasts (Reichheld 1996). The term ‘relationship marketing’, coined by Berry (1983), has come to represent this more balanced emphasis on continuing relationships rather than simply individual transactions (Peck et al 1999).

The popularity of this term has presumably influenced the adoption of the term ‘customer relationship management’ (CRM) over more recent years. Although some use the term as a synonym for relationship marketing – Hobby (1999) for example defining it as “a management approach that enables organisations to identify, attract and increase retention of profitable customers by managing relationships with them” – others apply it to “using information technology (IT) in implementing relationship marketing strategies” (Ryals and Payne 2001).

In addition to supply-side push from the IT industry, the trend towards IT-enabled management of customer relationships has other intellectual & sociological influences:

One-to-one marketing. Segmentation can be seen as a simplification of the messy complexity of dealing with numerous individual customers, each with distinct needs and potential value. When customers are reached via mass media, it is helpful to have a simplified picture of a typical customer in a given segment. IT-enabled channels such as the Internet, though, allow a one-to-one dialogue with a current or prospective customer, in which the product configuration, price and required service can be individually negotiated. Meanwhile, analysis tools attached to customer data warehouses can inform the supplier’s side of this negotiation through analysis of lifetime customer value, likelihood of purchasing a cross-sold product and so on. The far-reaching implications for marketing theory have been explored by numerous writers such as Peppers and Rogers (1993), Kelly (1997), Deighton (1998) and Seybold (2001).

The pressure on marketing spend. As the very existence of a separate marketing department became questioned in the early 1990s recession (Brady and Davis 1993), marketing staff came under increasing pressure to justify expenditure. This has increased the attractiveness of IT-supported media such as direct mail and the telephone (Blattberg and Deighton 1991) for reaching the customer, as compared to mass media or the sales force where effectiveness may be more difficult to measure.

Value chain management. Whether under the label of value chain management, business process redesign, total quality or market focus, organisations are increasingly thinking across departmental boundaries in order to concentrate on adding value to the customer. Marketing has been shamed that these initiatives have mainly originated elsewhere - in manufacturing, in the IT department, or from consultants brought in to manage a crisis. The need for marketing to act as an integrating function in co-ordinating the organisation's interaction with the customer, always present in the textbooks, is now more widely recognised, and even in some cases practiced. But attempts to enforce procedures representing marketing best practice on paper can easily be undercut by departments without a strong self-interest to comply - witness the sorry failure of many attempts to institute company-wide planning procedures, where the vital issue of "buy-in" is often ignored (Bartlett and Goshal 1995). IT offers marketing staff the opportunity to embed their customer-informed notions of best practice in sales, logistics and customer service into the organisation:

IT can embed discipline because when a computer tells you to do something, you can't really avoid doing it. It's difficult for centralised marketing to impose an infrastructure. Certain things can be centralised, like branding, and marketing strategy. But attempts to impose procedures can easily be ignored: it's easy for human beings to duck and weave. In the days when you could shoot people for disobedience it was different." Kit Grindley, quoted in Wilson et al (2001)

Trends in customer behaviour. Marketing has also been subject to consumer pull. Today's first-world consumer is more highly educated, under higher stress, more specialised, living longer, and more influenced by global culture than those of the 60s and 70s when our view of marketing was formed. This is resulting (Sheth & Sisodia 1997) in various changes to consumer behaviour, such as: an increased pressure on shopping time; a trend towards outsourcing by consumers, such as the increase in ready meals; increased consumer rationality; a fragmentation of consumer markets; and overall, an increase in the consumer's power relative to the producer's. Nor are these trends specific to consumers. As McDonald et al (1994) found, customer expertise, sophistication and power is increasing likewise in industrial goods and services markets. This power shift stems partly from the concentration of buying into fewer hands, evident in many industries, and partly from the

development of buyer groups, networks and alliances, all recent phenomena which have swung market control away from manufacturers. These trends in customer behaviour collectively put considerable demands on the organisation's information systems as higher service levels are demanded.

The need for a CRM strategy, then, is widely perceived by practitioners. This could cynically be regarded as simply a rebranding of marketing strategy. But it can be argued that the various forces we have described, such as the power of individualisation, the need to concentrate on the whole relationship and the ability to exploit IT-enabled channels, require at least a re-emphasis in the theory of marketing strategy. While some authors such as Wilson et al (2001) have attempted a holistic answer to this challenge in their reformulation of the marketing process, others have concentrated on some of its key components, such as the issues of channel choice (Belch and Belch 1993), multi-channel integration (Payne 2001), industry restructuring (Evans and Wurster 1997, Porter 2001) and individualised pricing (Baker et al 2001).

These vital debates about CRM strategy development will doubtless continue to evolve. This paper, though, explores aspects of an equally important complementary issue: how to ensure the successful implementation of an IT-enabled CRM strategy once it has been defined. This takes us into the realms of a different relationship: that between the IT function of an organisation and its commercial counterparts.

WHY MARKETING APPLICATIONS ARE DIFFERENT

“Happy families are all alike; every unhappy family is unhappy in its own way.”

Tolstoy, *Anna Karenina*

IT has a decidedly mixed track record at increasing the efficiency of white-collar work. The early emphasis on efficiency-based applications in such areas as finance, human resources and distribution has been replete with failures, whether measured by the proportion of projects which fail to meet their objectives, generally reported to be at least 70% (Pitt et al 1995; Ewusi-Mensah and Przasnyski 1991) – even higher than today's divorce rates - or by IT's overall impact on productivity. To assess the latter, Morgan Stanley economist Stephen Roach (Griffith 1997) compared the productivity gains over a decade in the US service industry, which received about 80-85% of IT investment, with those in US manufacturing, which spent the remaining 15-20%. While service productivity might have been expected to increase more, gains were in fact less than 1% a year, whereas the manufacturing sector managed over 3%. Roach put what productivity gains there

had been in services down to longer hours in the office – a far cry from the fears of excess leisure once computers did all the work.

As with a family, plenty of things can go wrong in the relationship between the IT function and other areas of the business to cause these failures. Can we do better than Tolstoy and elucidate what these problems are and how to avoid them? A strong theme of information systems research has been to identify these success factors (for example: Cannon, 1994; Nandhakumar, 1996; Williams and Ramaprasad, 1996; Teo and Ang, 1999; Martinsons and Chong, 1999), producing sizeable lists of such items as the support of senior management, the involvement of users in the design process and the need to adopt new business processes.

And yet despite this understanding, failure rates remain obstinately high (Ryals et al 2000). One reason is that the target is a moving one, as the nature of IT projects changes. As we have seen, a trend is evident towards IT applications at the customer interface whose aim is as much to add value through an enhanced customer relationship as to reduce costs. This change of emphasis from efficiency to effectiveness is a logical one, given that IT projects routinely overshoot their budgets, and that cutting costs alone is a perilous route to business success – none of the top ten discounters from 1962, the year in which Wal-Mart was born, being alive today (Kumar et al 2000). Suppliers have not been slow to catch on to this trend: the fragmented and often poorly-selling applications packages of a decade ago dealing with sales force automation, direct mail or call centres are being supplanted by what suppliers term CRM suites or packages which integrate the various channels to the customer, a market worth around \$6bn in 2000 if e-commerce is excluded (Hewson 1999) – though as Wilson et al (2001) explore, these systems typically still support only part of the job of managing customer relationships.

Do these effectiveness-based applications introduce new success factors? There is comparatively little emphasis in the success factors literature on differences between application areas, most papers concentrating on developing generic factors independent of the purpose of the system. And yet one might expect the nature of marketing to produce quite different problems and solutions from those found with other functions:

- How can rational IT staff, used to automating a business function, deal with the paradoxical notion that marketing is inherently cross-functional, coordinating the organisation's response to the external environment? Who is their customer?

- If the application is at the customer interface, involving the only partially predictable reaction of human beings to IT-enabled business changes, how can the project be thoroughly planned in advance, as IT managers like to do? How can the investment proposal be drawn up?
- IT professionals can readily see the similarity of CRM with enterprise resource planning (ERP) as another large integration project. As an old saying goes, show a business analyst two computer systems and he'll integrate them. But in the case of ERP, this process can take years – the BBC are still struggling to complete the implementation of SAP which was begun in 1994. How can this be squared with the need to respond rapidly to market changes with new IT-enabled channels?
- IT staff like to ask “the business” (whoever that is) for the “business strategy” (whatever that is) – which they expect to be predetermined, formalised and explicit - so they can “support it” by “solving business problems”. How does this mindset relate to the notion that IT-enabled marketing channels raise strategic choices, such as whether to bypass intermediaries or whether to deliver product/service components remotely, which the board may not even be aware of as options?
- Business analysts work through a process of evolving specification documents. How can they work with marketers who by personality are intuitive doers strong on creativity and weak on process definition?

To be fair, many of these issues are found in applications going back many years. But the continuing struggle of practicing managers to deal with them is being brought into sharp focus within the domain of IT-enabled relationship marketing. At the very least, we cannot assume that existing success factor literature covers them adequately. In this paper, we therefore build on the relatively sparse previous work in this domain, which we review in the next section, by reporting on the results of an inductive study designed to generate any new factors which have not yet been identified, as well as to test the applicability of better-established factors to this area.

For the purposes of this paper, we define CRM as processes and technologies that support the planning, execution and monitoring of coordinated customer, distributor and influencer interactions through all channels. Insofar as e-commerce is applied at the customer interface, therefore, it falls within our scope. We also include such marketing applications of the data warehouse as segmentation, calculation of customer lifetime value and targeting – described as “back-end CRM” by authors such as Ryals et al (2000). Our definition, and our set of cases, includes both packaged

and bespoke software, although many of the CRM packages currently on the market have very limited “back-end” functionality as yet.

A SYNTHESIS OF PREVIOUS RESEARCH

In Table 1 we summarise previous research on success factors for projects within this definition of CRM. Rather than returning to primary research, the table primarily integrates previous literature reviews on this topic or subsets of it. Leverick et al (1998) provide a wide ranging review of success factor research with particular reference to the marketing domain. By way of more specific areas, Ryals et al (2000) provide a comprehensive review of the CRM literature; Wilson and McDonald (1996) review success factors for marketing decision support; and in a wide-ranging study, Dutta (2000) examines emerging success factors in e-commerce – one area where a comprehensive literature review could not be found.

Table 1: A summary of previous research

Factor	IT/mkt Leverick	CRM Ryals	MktDSS Wilson	E-com Dutta
Determine INTENT <i>Gain champion/sponsor</i> <i>Ensure customer orientation</i>	*	* *	* *	*
Assess CONTEXT <i>Identify need for system convergence/coordination</i> <i>Organise round customer</i> <i>Address culture change in project scope</i>	* *	* *	* *	* *
Describe CONTENT <i>User involvement in system design</i> <i>Design for flexibility</i> <i>Manage IT infrastructure</i> <i>See other applications</i>	* * * *		* *	* *
Construct intervention PROCESS <i>Rapid strategy/action loop</i> <i>Pilot testing/trial</i>	* *		* *	* *
MANAGE intervention process <i>Flexibility in project management</i>	*			

We define success factors as issues influencing the success of an IT-enabled intervention which is designed to effect business change. (The term ‘intervention’, incidentally, should not be taken to imply a dehumanised approach to customer relationships: rather, it suggests, in the language of the literature on evaluation research (Patton 1987), that any project to introduce or enhance CRM can be seen as a modification of, or intervention in, the mode of working of the organisation, the effects of which may be contingent upon a number of factors.) Throughout this paper, we accordingly group

the factors under headings from a model of IT-enabled change developed by Ward and Elvin (1999) from more generic change literature. Ward and Elvin's stages of the change process are as follows:

- *Determine the intent*: First, the organisation determines why change is needed, sets expectations about potential outcomes and gains commitment to the intervention.
- *Assess the context*: An understanding is reached about the organisational and business context within which the intervention is to occur.
- *Specify the outcome*: The intent can be distinguished from a specification of the outcome of the intervention, in terms of the particular benefits which are desired.
- *Describe the content*: The content is what will change, under the two sub-headings of IT content and business content. These need to be defined and responsibilities assigned.
- *Construct the intervention process*: Here, the organisation designs a process for implementing the content changes defined above, including a business case and plan.
- *Manage the intervention process*: The intervention process designed in the previous stage needs to be carried out, with modifications as necessary to ensure an outcome that satisfies the intent.
- *Assess satisfaction of the intent*: Finally, the degree to which objectives of the intervention have been met, both in terms of content and outcome, can be assessed.

We have excluded two of these stages from our scope, 'Specify outcome' and 'Assess satisfaction of intent'. We assume that the issue of the desired outcome, which will vary substantially between different types of system, is clear, at least to a stakeholder who initiates the project. As we have discussed in our introduction, the important issues this raises of relating IT and marketing strategy are tackled elsewhere. We also exclude the issue of developing appropriate success measures, a large topic in its own right (Berthon et al 1996).

For simplicity we have omitted from Table 1 and subsequent consideration various well-established factors identified by one or more of the papers studied which, while applying equally to this domain, do not appear from previous research to raise any new issues not dealt with thoroughly by the generic success factors literature. These are: the importance of clear and early definition of requirements; the need to link the IT system to business objectives; the need to have an adequate implementation plan; the need for adequate resources; the helpfulness of prior user experience with IT and of support from any internal IT department; the importance of ease of use; and the need for adequate training.

We will discuss the factors of Table 1 briefly below.

Determine intent: As with other IT applications, top management sponsorship and the presence of a champion to drive the intervention are widely recognised as important. The potentially far-reaching effects of e-commerce lead Dutta (2000) to take the tough position that the Internet should be “a top strategic priority for your CEO”. If the project’s aim is to add to customer value, this needs to be complemented by a customer or market orientation, or at least by the perception of the need for it (Wilson and McDonald 1996), in which case the project’s scope should aim to increase it.

Assess context: The IT context of a project includes the existing set of systems. Leverick et al (1998) emphasise the need for “compatibility and integration with other marketing IT projects”. Ryals et al (2000) go beyond this to the need for a plan for customer-facing systems to converge so as to give a single view of the customer or competitors. The wider organisation also needs to be aligned around the customer, either through the organisational structure (McDonald 1996) or through cross-functional teams (Ryals 2000; Wilson and McDonald 1996). A further element of the context which has implications for the project scope is any adverse aspects of organisational culture, Wilson and McDonald (1996) for example identifying the need for systems to be “perceived as empowering not controlling”.

Describe content: Successful system design depends on user involvement, which in this domain may need to be cross-functional (Leverick et al 1998). There is nevertheless an important role for the IT function in ensuring that the IT infrastructure is managed appropriately to ensure synergies between projects and provide a platform for the future (Grindley 1995). As the customer interface is perhaps more susceptible than some internal applications to the need to respond rapidly to external changes, the need to design for flexibility is important. Leverick et al (1998) also suggest seeing the proposed application in use elsewhere.

Construct intervention process: Dutta (2000) emphasises the need to experiment in the marketplace with a “rapid strategy/action loop” in order to “compete in Internet time”. This goes beyond the need to conduct pilot tests (Leverick et al 1998).

Manage intervention process: Leverick et al (1998) emphasise that project management needs to be flexible in order to respond to unexpected events during implementation and still deliver the desired outcome.

RESEARCH METHOD

In order to build on these success factors identified by previous researchers, we wished to test them against a range of recent projects, including representatives from the important areas of “front-end” CRM at the customer interface, “back-end” CRM for analysis purposes, and customer-facing

e-commerce applications which link in with core customer databases. But we did not wish to exclude the possibility that the factors might need modification, or that additional factors might emerge, given the evolving nature of this application area and the relatively sparse previous research. Hence we desired a method combining theory testing with theory generation.

We chose the analytic induction approach to qualitative analysis, which meets this requirement. Originally proposed by Znaniecki (1934), analytic induction has developed into perhaps the best-developed logic for theory development and testing across multiple case studies (Gill and Johnson 1991, p115 et seq). In brief, the method involves formulating a hypothesis; comparing the hypothesis against the first case; if it does not fit, reformulating the hypothesis so as to be consistent with the data in the first case; comparing the revised hypothesis against the second case; and so on. According to Cressey (1950, 1953), an important early developer of the approach, “practical certainty may be attained after a small number of cases, but a single negative case requires a reformulation...The procedure continues until a universal relationship is established”. A full review of the approach can be found in Wilson (1996).

Translated into the context of this study, the method can be summarised as follows:

1. A set of five cases within the CRM domain was selected to provide maximum variation in: the industry sector (listed at the top of Table 3); the nature of the application; and the perceived success of the project (summarised at the bottom of Table 3). A sixth case involving an extranet developed by a high-tech company was completed, and was consistent with the findings reported here, but due to confidentiality restrictions is not further reported.
2. The unit of analysis was a project in the wider sense of an IT-enabled intervention designed to effect business change. Hence interviews were held not just with IT managers, but also with staff in a marketing or sales role and with relevant general managers. 23 managers were interviewed over 15 interviews, some interviews involving more than one manager. Interviews were from one to three hours long.
3. Interview questions concentrated on historical events, for example about the history of the project. This meant that perceived success factors were often expressed without having been prompted for, removing one potential source of bias. This also meant that the perceptions were more likely to be related to historical accounts that could be followed up with other interviewees, in order to triangulate the perception with that of others and with the authors' own interpretation of the incidents related. Follow-up questions to raise particular potential success factors were as neutrally worded as possible.

4. The interviews were tape-recorded and transcribed, then annotated with themes relating to potential success factors.
5. The first case was considered against the success factors from previous literature in Table 1. Each success factor was given a sentence or two to summarise the “messy degree of complexity” (Glaser and Strauss 1967) inherent in qualitative research. User involvement, for example, was summarised as: *“Involve users in system design. Users of a system, or their representatives, need to be closely involved in such tasks as requirements specification.”* The evidence was then weighed as to the extent to which the case supported the success factor. This qualitative and judgemental process took account of the criteria listed in Table 4 relating to data consistency and triangulation, and the theoretical fit. The match was summarised in the scoring system described in Table 4, complemented by notes and illustrative quotations. However, this score should still be interpreted as a concise summary of qualitative data, not as an attempt at quantification.
6. Any new hypothesised success factors from the case were similarly summarised and scored. For example, case B introduced the factor *“Define approval procedures which allow for uncertainty”*.
7. Steps 5 and 6 were repeated for each case.
8. Any mismatch between the data and the hypothesised success factor caused a review of the success factor. If the data simply contradicted the proposition, it was to be scored negatively. (However, this eventuality did not arise in the actual analysis.) If the proposition could be modified to cover the new data as well as any previous data, this modification was carried out. For example, user involvement was reworded as a result of case A (new words underlined): *“Involve users interactively in system design. Users of a system, or their representatives, need to be closely involved in such tasks as requirement specification. This involvement works best if it is interactive: users may not have the skills to write requirements specifications, while they made not understand written specifications produced by IT staff.”*
9. When all cases had been analysed, the evidence was summarised in a summary table (Table 3). The strength of support for each proposition was then summarised in words (see next section). Again, as the table is a highly abbreviated summary of rich qualitative data, this process was qualitative and judgemental rather than mechanical.

This operationalisation of analytic induction is very close to that used by Wilson and McDonald (1996). This extension of the analytical induction method to allow for multiple propositions, as well as multiple cases, is schematically illustrated in Figure 1.

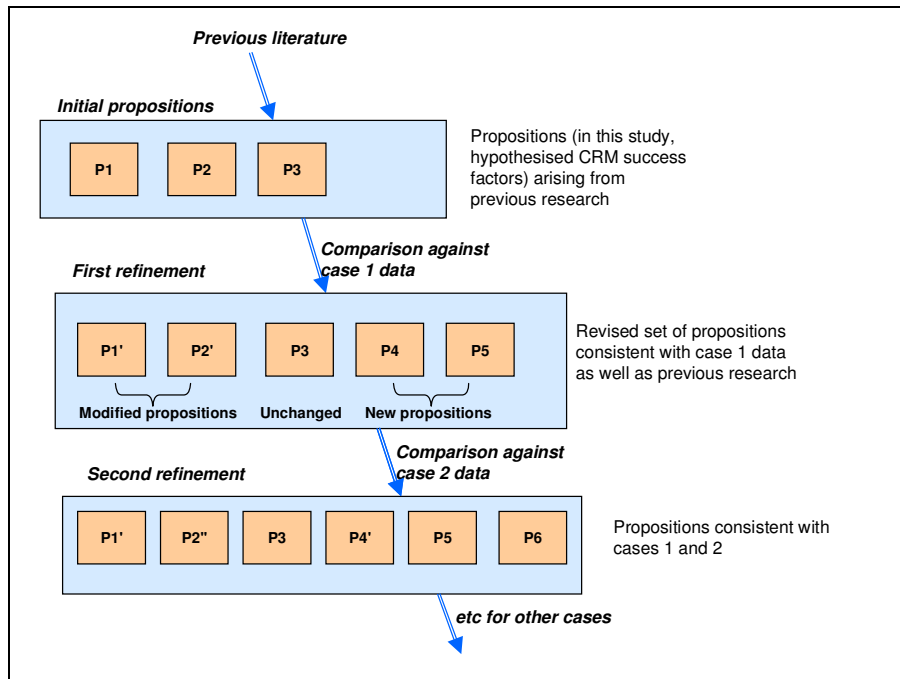


Figure 1: Analytic induction – developing multiple propositions across multiple cases

What is meant by project ‘success’ is a complex issue in itself, as many criteria can be used to evaluate success and the most relevant criteria are likely to be specific to the system under consideration and the organisational context (Drury and Farhoomand, 1998; Martinsons and Chong, 1999). DeLone and McLean (1992) review six variables which can be used to measure IS success: system and information quality; the extent of use of and user satisfaction in the system; and the system’s individual and organisational impact. To these can be added user benefit perception (Hewson and Wilson 1994; Guimaraes et al 1992; Money et al 1988), in which the evaluator wishes to know not just whether the system has been useful, but in what ways. Given the multifarious business aims of the projects studied and our emphasis on business change, this was the approach chosen. The intended and realised benefits were identified and the extent to which they were achieved was assessed. As shown in Table 4, success factors were assessed for their impact on the achievement or otherwise of these benefits.

Case A involved a project in which intelligence from a marketing database was being used to produce marketing communications targeted at particular segments – a significant step for a utility used to an operational focus in which all customers were treated in exactly the same way. Case B was the implementation of a second-generation sales force automation package within an electricity generator. Case C followed the progress of a business-to-business e-commerce project within a

paper manufacturer. Case D involved rewriting a direct mail application to ensure year 2000 compatibility, and simultaneously integrating the application with an order-handling system to provide a more flexible platform for the future. Case E covered the development and early use of a marketing analysis system which held statistics on sales and market size by product type and by market, using OLAP (Online Analytical Processing) technology, in order to aid with the identification of promising opportunities and the evaluation of campaigns.

RESULTS AND DISCUSSION

As discussed in the previous section, the success factor list resulting from the study is shown in Table 2. New factors, or refinements of previously identified factors, are underlined. Table 3 summarises the evidence for each of these factors, using the scoring system of Table 4. We briefly discuss each factor in this section, with particular emphasis on new and modified factors.

Factors supported by this study

Within this group of factors, at least one case provided clear support for the factor's influence on system success, while no case provided contradictory evidence.

Gain champion/sponsor: board level backing was cited in all cases as crucial, with particularly strong evidence in case A, in which a new marketing board member had proved essential to CRM initiatives. The dangers of championship from a limited range of functions was shown by case C, in which the aim of an integrated customer interface had in the past been hampered by differing views of different directors.

Define approval procedures which allow for uncertainty: this factor was introduced in case B, in which the risk-averse culture of this electricity generator – a healthy and understandable attribute as far as its core operations were concerned – seemed to be a barrier to investment in sales automation, an area where a degree of risk about benefits is inevitable, customer behaviour being outside the direct control of the business. But not investing also had its dangers, in the view of one interviewee:

“Did a better profile of customers arise from implementation of this IT, or from something that the account manager did differently, or from pure luck? Quantifying benefits is particularly hard in our business...But sometimes you need the investment just to stay competitive in the marketplace. How do you quantify that?”

But clearly a degree of control is needed over the approval of capital-intensive projects from limited resources. Case E found a balance through flexible R&D budgets, which could be used to provide seedcorn funding until benefits could be better quantified.

Table 2: Full descriptions of final success factor list

Factor	Full description
<i>Determine the INTENT</i> <i>Gain champion/sponsor</i>	A sponsor is needed, preferably at board level, to sell a proposed project and to build commitment across relevant functions. This may be a marketing, sales or IT director, but <u>if cross-functional commitment is not gained, non-optimal 'silo' applications can result</u>
<i>Ensure market orientation</i>	The organisation needs a market orientation, or at least the perception of the need for it, if an IT system is to be accompanied by the necessary business changes and deliver the intended benefits.
<i>Define approval procedures which allow for uncertainty</i>	Applications which aim to increase efficiency may be cost-justified precisely. But effectiveness-based applications are difficult to predict, even if the case is strong. Project approval procedures should recognise this. Otherwise project champions resort to spurious accuracy to gain project acceptance.
<i>Gain board awareness of strategic potential of IT</i>	If the board regards IT as merely a support function to keep the business running smoothly, ideas for major initiatives at the customer interface are unlikely to flourish.
<i>Assess the CONTEXT</i>	
<i>Identify need for business system convergence internally & coordination externally</i>	An explicit IT strategy for marketing should be developed to ensure that disparate projects can be integrated to deliver a single organisational view of the customer, product or competitors.
<i>Organise round customer</i>	As marketing becomes data-driven, its need to integrate closely with other functions increases. <u>A joint sales/marketing director may be more conducive to IT-enabled marketing applications. Failing that,</u> close teamwork on joint processes is necessary, such as with cross-functional process teams.
<i>Address culture change in project scope</i>	The project plan needs to address any requirement to change organisational culture, such as addressing staff willingness to share data, rather than leaving this issue until later or ignoring it.
<i>Describe CONTENT</i>	
<i>Involve users <u>interactively</u> in system design</i>	Users of a system, or their representatives, need to be closely involved in such tasks as requirement specification. <u>This involvement works best if it is interactive: users may not have the skills to write requirements specifications, while they may not understand written specifications produced by IT staff</u>
<i>Design for flexibility</i>	The difficulty in getting IT right first time, combined with the need to phase and a changing environment, necessitate the inclusion of flexibility as a key design constraint. Rapidly changing IT platforms and business needs require independence and generalisability of data models.
<i>Manage IT infrastructure</i>	While user departments may believe they have the skills to bypass the IT function, there is a need for coordination of IT infrastructure to ease future support and development, and to exploit the cross-functional and, indeed, inter-organisational nature of customer-facing processes
<i>Leverage models of best practice</i>	Where available and suitable, the use of minimally tailored software packages can embed aspects of best marketing practice, as well as reducing development risks
<i>Construct intervention PROCESS</i>	
<i>Rapid strategy/action loop to experiment & gain credibility</i>	Relaxed timescales render a project vulnerable due to loss of key sponsors, organisational restructuring, external events and so on. A phased approach can help to build the credibility of those driving the change through the visibility of early deliverables. 'Big-bang' approaches are more vulnerable to cancellation due to perceived lack of progress
<i>Prototype <u>new processes, not just IT</u></i>	Effectiveness-based marketing applications may have profound implications for internal or external processes and relationships. These need prototyping just as much as the IT; if left too late the IT will constrain necessary modifications to the initial plan
<i>MANAGE intervention process</i> <i>Manage for delivery of benefits, not specification</i>	Documents such as requirement specifications may need refining during implementation, if the intended benefits are to be achieved. The implementation process needs to reflect this need for flexibility

Note: Underlined text indicates new or modified factors as a result of this study

Table 3: Findings

Factor	Case A Utility	Case B Electricity generator	Case C Paper manufacturer	Case D Business school	Case E B-to-B distributor
<i>Determine INTENT</i> <i>Gain champion/sponsor</i>	***/+ New mktg board member crucial	***/+ Commerce dir's board presence vital	**/+ Lack of board continuity unhelpful	**/+ Previously IT regarded too tactically	***/+ Board backing helps
<i>Ensure market orientation</i>	**/+ Clear desire to improve from top	*/+ Previously poor but improving	*/+ Tendency to production orientation	**/+ Cust needs spurred development	**/+ Slow shift from operations focus
<i>Define approval procedures which allow for uncertainty</i>	DK	*/+ Inherently risk-averse organisation	**/+ A problem in one project	***/+ Flexibility aided by small scale of projects	***/+ R&D budgets provide flexibility
<i>Gain board awareness of strategic potential of IT</i>	DK	DK	*/+ Uneasy relationship with IT	**/+ Importance of IT risen	DK
<i>Assess CONTEXT</i> <i>Need for IT convergence/coord.</i>	**/+ Clear need for single view of cust.	**/+ Moving in direction of coord	*/+ Need recognised, not yet delivered	**/+ Need recognised late but now clear	**/o Not necessary in this case
<i>Organise round customer</i>	**/+ Cross-functional teams found useful	**/o Not a problem in application studied	*/++ Separate mkt, sales depts unhelpful	*/+ Organisation round products primarily	DK Structure issues underexplored
<i>Address culture change in project scope</i>	*/+ Felt to be left too late in projects	*/o System had few cultural implications	*/+ Underexplored cultural implications	**/+ Problems known if not yet solved	**/+ Need to share data important
<i>Describe CONTENT</i> <i>Involve users interactively</i>	**/+ Specs improved by face-to-face work	***/+ Shift to workshops productive	*/+ A gap, leading to lower commitment	**/+ In past a lack of business analysis skills	***/+ RAD proving fruitful
<i>Design for flexibility</i>	***/+ Clear design aim	***/+ Learnt from previous mistakes	**/+ Recognition that standards help here	**/+ Past problems here, now thought important	**/+ Some flexibility built in
<i>Manage IT infrastructure</i>	***/+ Sophisticated IT coordination	**/+ Learnt from previous mistakes	*/+ Underemphasised in recent proposal	***/+ Active mgt replaces ad-hoc style	DK
<i>Leverage models of best practice</i>	DK	**/+ 2 nd time round, gained from package	***/+ Lessons learned from earlier projects	***/+ Collaboration with vendors helping	**/+ Consultancy used to ensure
<i>Construct intervent. PROCESS</i> <i>Rapid strategy/action loop</i>	***/+ 'Quick wins' gained credibility	**/o Wasn't needed in this case	*/++ Long design lost commitment	**/+ Greatly increased speed of loop	**/+ Held back by structure changes
<i>Prototype new processes, not just IT</i>	DK	DK	DK Perhaps a danger in a new project	*/+ Processes ironed out once IT in place	***/+ A conscious part of project
<i>MANAGE intervention process</i> <i>Manage for delivery of benefits</i>	**/+ Spec should not be in 'tablets of stone'	***/+ Interactive meetings helped	**/+ Needs better IT/marketing relship	**/+ Previous system met spec not needs	***/+ Live trials help check benefits
PROJECT SUCCESS	High	High within limited ambitions	Low – tendency not to proceed	High within limited ambitions to date	Medium to date

Table 4: Scoring system for evidence about success factors

RATING OF PRESENCE OF FACTOR	
*, **, ***	The extent to which the factor is present in the case. *** indicates the factor is fully present, * indicates that it is not present. Eg: * indicates no champion/sponsor, *** indicates senior, effective champion/sponsor.
DK	The data is insufficient to rate the case on the factor.
RATING OF INFLUENCE OF FACTOR	
+, ++	The factor appears to be influential in determining project success. ++ = the case supports the factor; + = data consistent with factor but inconclusive. Criteria used in assessing include: a) Data consistency/triangulation: consistency of story from different interviewees; the substantiation of user perceptions with narrated events; corroboration from observation or documents b) Theoretical fit: i. where the factor is fully or partially absent, benefits are reduced or absent ii. where the factor is present, benefits are present, or there is some other plausible reason for their absence iii. a plausible causal explanation links the factor to the benefits obtained. For a ++ score, all three points under b) and at least one point under a) need to be addressed.
-, --	The factor is not influential in determining project success. -- indicates clear evidence, - indicates some indication. Note: no instances found in this study.
o	While there is no or insufficient indication that the factor is influential in determining project success, there is equally no or insufficient indication that it is not.

Gain board awareness of strategic potential of IT: a factor introduced by case C, case D showed the powerful shift from a costs focus to a benefits focus that could occur when the strategic nature of IT investments was recognised in board-level appointments.

Organise round customer: Although case A had an organisation primarily around the product line, this was being successfully counterpointed by cross-functional teams to champion the customer perspective. Case C showed the problems that can occur if marketing and sales departments are divorced under separate directors, with the two sometimes pulling in different directions.

Involve users interactively in system design: case A introduced the notion that user involvement in system design needs to be face-to-face, not just at a distance through the writing and review of specification documents. Business analysts in cases A and C reported that unlike users in domains such as finance, marketers were not necessarily skilled in the detailed process thinking needed for writing or reviewing specifications – a problem recognised by one marketer:

“We write things from a flowery marketing perspective. But our requirements specifications become tablets of stone.”

Furthermore, the nature of the domain required creativity in the definition of new processes, which was aided by the interactivity of face-to-face meetings. A workshop approach was proving

productive in case B, in contrast to experience on a previous project which concentrated on written documents:

“The requirements specification was inches thick, and it still doesn’t do what the users want. Because someone had to write out line by line what the system must do. That’s extremely difficult for anyone, let alone the user who just wants the outputs, and doesn’t wish to concern himself with inputs or processing.”

Design for flexibility: The importance of designing a system in such a way that it can readily be changed to meet future requirements was widely recognised. Case B provided a clear comparison between generations of the same system, the second generation being based closely on an off-the-shelf package to aid in future tailoring and support.

Rapid strategy/action loop: While the literature cites a changing competitive environment as the motivation for a rapid strategy/action loop, cases A and C added the problem of a changing internal environment. A long project may seem rational to the developers, but leaves it open to cancellation due to management changes, or a loss of faith from managers who do not understand the waterfall model of development and do not perceive progress until they see the resulting system. A clear vision, combined with short-term ‘quick wins’ which gain credibility, seemed the best approach for major projects.

Factors with limited support

Within this group, while the research is consistent with the hypothesised success factor, rival hypotheses cannot be ruled out. Often this is because of the difficulty of isolating the effect of the factor from the effect of other possible success factors that may have caused the success or otherwise of the system.

Ensure market orientation: In case D, in which the organisation’s culture and processes are focused strongly around understanding and responding to customer needs, these needs acted as a spur to enhance IT systems at the customer interface. In cases A and E, by contrast, a conscious perception that the organisation needed to improve its customer focus was one of the motivations for IT developments to enable and embed corresponding process changes.

Need for IT convergence/coordination: In all the cases except case E, the project studied formed part of a longer-term initiative towards the development of an integrated customer repository, from which all customer-facing systems would draw. As this vision was not yet realised in any of the cases, though, the anticipated benefits of this quintessential customer relationship management vision cannot be confirmed, though limited benefits from the integration so far achieved were reported in cases A and D.

Address culture change in project scope: The argument that projects need to address the issue of cultural change was made by numerous interviewees, for example one in case A:

“It’s easier to move on the harder issues like technology than the softer ones. If you think about our interfaces [between parts of the organisation], the biggest thing is culture. But we start with the hard systems first.”

Evidence collected on the impact of cultural change initiatives was, though, limited.

Manage IT infrastructure: Past experience in cases B and D supports the view that a danger of commercial functions taking on responsibility for IT systems is the lack of attention to IT infrastructure issues that can result. In both cases, the IT infrastructure is now more actively managed through stronger central control, although responsibility for specific applications is shared with user departments.

Leverage models of best practice: Case B introduced this factor, through the observation that the second generation of the sales automation system benefited from being based more closely on an off-the-shelf package, which allowed the organisation to benefit from the experience of others in refining best practice. The factor was also supported by cases C, D and E.

Prototype new processes, not just IT: This factor was introduced by case C, in which the plans from the IT department for a new system did not seem to involve the testing of some plausible but far-reaching assumptions about the effect of EDI on both the organisation and its customers. Although the case provided no evidence as to whether the authors’ concerns over this were justified, case E showed the benefits which can occur when new processes are prototyped at an early stage. Here, the business case for further system development was clarified, as well as steering the system development in the light of the process prototyping.

Manage for delivery of benefits, not specification: This factor gave a more precise wording to the previously-identified factor of ‘flexibility in project management’. There need to be limits to flexibility if projects are ever to complete, case B for example benefiting from a strict time limit. But limiting time or resources can backfire, as previous experience in case A had shown:

If you’re not careful, your timescales become the drivers. You then come into descoping. Then what you get isn’t what you really wanted. And having delivered to timescale, you spend the next six months sorting out the problems.”

In this case, the need was identified to review requirements during the project to ensure that there were indeed adequate to deliver the required benefits:

“We need a review and challenge exercise six or eight weeks down the line, to say, ‘do we still mean that’? It’s all a matter of communication between owner and implementor. There’s a steerage that’s needed during implementation, to add clarity as to what needs delivering.”

Summary of impact of factors on project success

We have summarised at the bottom of Table 3 the extent of project success, as perceived by the interviewees, in each of the five cases. To provide another perspective on the data, we will briefly discuss which factors appeared most influential in determining success in each case.

- *Case A: Utility.* This innovative initiative, building a customer dialogue based on micro-segmentation using a customer data warehouse, and maintaining this individualised dialogue not just through traditional ‘marketing’ channels such as direct mail but also through operations such as billing which had previously treated all customers identically, was strikingly different from the traditional image of the production-focused utility. Its existence derived from an explicit, clearly communicated board-level drive to improve customer focus, a drive embedded into the organisation through a board-level appointment, a well-supported new department and the institution of cross-functional teams and procedures. In an organisation long used to efficient delivery, the critical new factors in this project were therefore the additional elements of ‘Gain champion/sponsor’ and ‘Ensure market orientation’, along with a ‘Rapid strategy/action loop’ which helped sell the approach more widely in the organisation.
- *Case B: Electricity generator.* This second generation of a sales automation system was undoubtedly an improvement on the first, due largely to the ‘Involve users interactively’ factor: a shift from sending paper specifications around for comment to interactive specification in workshops, leading to a richer dialogue between technologists and system users, and a better understanding by the former of how business benefits could be enabled. It also gained from ‘Leverage models of best practice’, using a package as a basis for a beneficial sales process redesign. Within the limited ambitions of the project, this led to success. There remained a sense, though, that if this rationalistic organisation were to score higher on ‘Define approval procedures which allow for uncertainty’, more radical shifts in key account management would be possible and beneficial.
- *Case C: Paper manufacturer.* A history of half-finished initiatives and piecemeal solutions showed the difficulty this organisation had with moving consistently towards a market orientation, despite some talented managers. The various good ideas they generated were undermined by a strong functional structure, with separate marketing, sales and IT departments struggling to agree and trust each other. In this context, the long design period of the major

initiative studied gave too much time for the commitment to unwind. Critical success factors missing, then, were ‘Organise round customer’, ‘Gain board awareness of strategic potential of IT’ and ‘Rapid strategy/action loop’.

- *Case D: Business school.* Hearts must have sunk among some longer-serving staff members at news of the introduction of a fourth generation of the school’s core customer database. But this more strategically conceived version provided at least a basis for more holistic management of customer relationships, integrating two previous systems to provide a single repository for most customer data. Not all customer data: the organisation’s structure around product lines was reflected in some products being left with their own systems, perhaps an opportunity lost in the need to act fast to ensure Y2000 compliance. A fast pace did mean, though, that the pain of the teething problems was over quickly, and follow-up projects to use this customer data to better inform customer interactions could be rapidly initiated. Important success factors thus included ‘Gain board awareness of strategic potential of IT’ and ‘Rapid strategy/action loop’, with a possible question-mark around ‘Organise round customer’.
- *Case E: B-to-B distributor.* The only case study to focus exclusively on ‘back-end’ CRM, this marketing analysis system helped to answer questions such as: “What industry sectors in Germany should we focus our growth efforts on?” and “Which products would they be most interested in?”. The approach to its development and application seemed so inductive, with flexible seedcorn budgeting (‘Define approval procedures which allow for uncertainty’) and ideas conceived developed and tested for real rapidly (‘Involve users interactively’, ‘Prototype new processes, not just IT’ and ‘Manage for benefits’), that it could almost be caricatured as a solution looking for a problem. Yet it succeeded in adding significant value on a minimal budget, without the need for expensive integration of core systems.

CONCLUSIONS

Our results support various success factors identified by previous authors: the importance to the success of IT/marketing initiatives of a market orientation; the need for business system convergence on a single view of customers and other entities such as competitors; the need to include cultural change issues within the project’s scope; the need to design for flexibility; and the need to manage IT infrastructure.

Further light has been shed on certain other factors:

- We have seen that in this domain, the commonly-cited need to gain a board-level champion may not be enough. Commitment is often needed across numerous functions which deal with the

customer: without such strong, genuine commitment, non-optimal ‘silo’ applications can result, in which the potential benefits of a single view of the customer in terms of understanding customer value, prioritising resources on profitable customers, and understanding how to satisfy particular customer segments, cannot be fully realised.

- A related point is that separate directorships for sales and marketing can be problematical. While an primary organisational structure around products can be effectively complemented by cross-functional teams focusing on the customer, the evidence we have seen strengthens the argument (Davidson 1999) that organisations can best be viewed in the three major blocks of supply management, operations and demand management, which should arguably each have a single director responsible for them, or at the least should be designed coherently.
- We have added to the reasons for a “rapid strategy/action loop” (Dutta 2000) with the observation that long-term projects seem particularly vulnerable to cancellation due to structural or personal changes, or simply due to perceived lack of progress, whether grounded in reality or not. This presents a problem given that implementing an integrated CRM suite or adding an Internet channel takes a great deal of work. The circle can be squared by defining “quick wins” that collectively contribute to a long-term vision - in the words of one marketing manager, by “eating the elephant of CRM one bite at a time”.
- Once a project is under way, effective communication between IT staff and their commercial counterparts is, as always, an issue, given the very different cultures they inhabit – as one interviewee put it, “IT are from Mars, marketing are from Venus”. We have found that “user involvement” needs to be interactive and face-to-face: sending specifications to each other for comment (whether on paper or electronically) simply doesn’t seem to work. We recall the finding of Bartlett and Goshal (1995) that in many organisations, disastrous consequences ensued when the generation and transmission of reports replaced direct communications from people representing their own ideas, analyses and proposals. Instead, they advocated “reinforcing the rope bridge of systems-based communication with the steel girders of frequent personal contact.” We have also found that personal contact needs to continue through the IT development cycle, rather than stopping once a specification is defined, if the project’s benefits are to be realised.
- The IT itself is not the only area where iteration may be required before the right solution is found. We have also found that in this domain, in which IT is likely to be an enabler to radically different processes, those processes also benefit from being prototyped. As one successful implementor of an e-commerce channel argued to us, the best decision he took was to build a

link to back-end fulfilment and finance processes into his very first pilot, as ironing out these processes was a key to success.

We have also identified three success factors which were not present in the existing success factors literature we surveyed:

- Leveraging a model of best practice embedded in an off-the-shelf system can, at least, reduce the risk involved in development of bespoke software. A CRM package can ensure that all customer-facing packages draw on a common data model (Ovum 1999), while a package for such management tasks as market segmentation, econometric modelling and marketing planning can implicitly provide a standardised process for these tasks (Wilson 1996). Taylor and Ward (1999) made a similar recommendation in the area of enterprise resource management (ERP) systems.
- Given the strategic decisions implicit in CRM projects, it is not sufficient for the board to empower an IT director, or anyone else, to propose and develop systems. The board needs to be aware of IT's strategic capability, and be actively involved in the formulation of IT strategy. This is consistent with King and Teo's (1997) empirical findings that far from deriving IT strategy from business strategy, or even developing the two in parallel, the two are best developed as a unified entity.
- Rigid approval procedures for capital expenditure can act as a barrier to developments with a strong rationale but a degree of risk, favouring less important but more secure projects. Ryals (2000) has argued for the explicit incorporation of risk in the calculation of such measures as customer lifetime value, allowing risk to be taken account of without ruling out risky developments. Another loosening of traditional procedures we found effective was to set aside seedcorn funding in advance, which can be used to fund potentially important pilot projects quickly. Without such measures, project proponents will simply cook the books, underplaying risks and leaving the board in a worse position to manage those risks carefully.

If marketing is still suffering from mid-life crisis (Brady and Davis 1993), the younger discipline of IT is surely still suffering from adolescence, with all its attendant delusions of grandeur periodically pierced by dramatic failures. The marriage of this undoubtedly talented couple may be no more troubled than most, but troubled it still is. The themes which need to be pursued in their joint therapy are at least becoming clearer.

ACKNOWLEDGEMENTS

The Cranfield research project which led to this paper entitled “Improving marketing effectiveness through IT” was sponsored by a consortium of companies whose support is gratefully acknowledged. We would also like to acknowledge the essential contributions of Professor John Ward and Frances Sutherland to the project.

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