The History of IT in Contemporary Marketing Practices (CMP): The Challenges and Opportunities for Reframing the ICT Dimension within the CMP Framework

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Abstract

Information and communication technology (ICT) has been increasingly used by all business functions during the past 50 years. For much of this time marketing practitioners have endeavoured to find the best ways to introduce ICT successfully into their domain, while marketing academics struggled to develop appropriate explanatory and prescriptive frameworks to enable the comprehensive study of this development. The Contemporary Marketing Practice (CMP) framework (Coviello et al., 2002) and the resulting empirical research findings from these and other studies highlight the ICT challenges for marketers during the 1990s. This paper explores the developments of IT/ICT within the CMP framework aligned to the technological developments of that time and provides a historical analysis of ICT assimilation into marketing practice from both theoretical and practical perspectives. The paper is more inclusive in the range of ICTs within the CMP framework to more fully reflect both technological developments and their assimilation within business and society. It identifies and argues for the need to expand the skill set of marketers to more fully enable the use of ICT within contemporary marketing practice.

Introduction

The changing role of information and communication technologies (ICTs) in marketing poses a substantial challenge to both marketing academics and practitioners. This paper reflects on how historically marketing academics and practitioners have struggled to conceptualize and operationalize the role of ITs as a core part of marketing. The fundamental and contemporary questions are; is ICT used in marketing practice and at what level of return to the organisation? Does ICTs add value to the company and the customer from both informational and interactional perspectives? How can we ensure that marketers have the skill set required for this ICT dominant networked globalised business environment? The central issue reflected in these question is well identified by Downes and Mui (1998) who state that "[a]s technology moves from its position as a defining element of the back office to a

disruptive force in the marketplace, the problem now faced by most organisations is that there is rarely anyone, much less an organization, with the mandate and the resources to help senior management treat digital technology strategically".

While numerous academic and practitioner articles in the 1980's and 1990's discussed how ICTs were expected to impact on marketing practice from general and individual ICT perspectives, no usable framework to track the impacts of ICT developments and deployment on marketing practice has emerged. The substantial investments in terms of money and effort into ICT initiatives within the marketing arena have resulted in many major failures or, at a minimum, in significant technical, human and organizational challenges (Chen and Ching, 2004; Dempsey, 2000). Many efforts to gain efficiencies and profitability from the introduction of ICTs, such as the internet (Deeter-Schmelz and Kennedy, 2004; Geiger and Martin, 1999,) sales force automation (Speier and Venkatesh, 2002; Geiger and Turley, 2005), EDI (Naude and Holland, 1997; Chan and Sweetman, 2000), Marketing Information Systems (Li, 1995), databases (Desai et al. 1998), or Customer Relationship Management (CRM) (Chen and Ching, 2004; Payne, 2001), have not lived up to initial expectations.

Given the lack of a clear understanding of how ICTs impact on marketing practice, and the slow marketing uptake of technologies during the 1990s, the initial contemporary marketing practices (CMP) studies did not incorporate an explicit technology dimension. It was not until Coviello et al. (2001; 2003) added an e-Marketing (eM) component to their framework that ICTs in marketing were systemically considered. Since then, various researchers have used the Coviello et al. (2001; 2003) and other such frameworks to study the operationalisation of IT in marketing practice.

Whilst initial studies during the 1990s show a low incidence of eM adoption, more recent investigations have found that not only has there been an increase in the penetration of eM in firms, but that firms adopting eM are also likely to show an improvement in marketing performance (Barwise and Farley, 2005; Brodie et al., 2006). These studies suggest that eM is "coming of age", in large part as a consequence of its integration with the other marketing practices.

In this paper we review both the historical and contemporary situation in relation to ITs within the CMP framework, and also more generally within marketing practice. We then propose some possible avenues for future exploration and development, such as the suggestions to broaden our perspective from ITs (information technologies) to ICTs (information and communications technologies), to include ITs *horizontally* within the CMP framework as both an IT investment and IT orientation across all five approaches to contemporary marketing practice, and the practical and research implications of the management and organisational challenges for marketers arising out of ICT deployment within a marketing framework.

Defining Information Technologies

There have been definitional issues with ITs since Leavitt and Whisler (1985) first introduced the term (Braun, 1998; Glazer, 1991). The complexity of this issue becomes clear when one considers both the range of relevant technologies and the variety of roles they can perform on one hand, with the substantially different experiences and modes of engagement that individuals and communities can have with such technologies (Hitt and Brynjolfsson 1996; MacKenzie and Wajcman 1999). In addition, the different purposes of such definitions (Braun 1998)add to the difficulty of developing and agreeing on clear and unambiguous definitions. The lack of such definitions has resulted in major research difficulties (Preston 1997; Hitt and Brynjolfsson, 1996), particularly in the marketing arena (Glazer 1991; Leverick et al. 1997). Proposed definitions reflect a variety of perspectives including conceptions of IT as social construction, as an information provider, as an information infrastructure, and as a set of business processes and systems.

For the purposes of this paper, we adopt Ward and Peppard's (2002) updated version of suggestions from Leavitt and Whisler (1985), Porter and Millar (1985), Morton (1991), and Willcocks (1996*): "IT refers specifically to technology, essentially hardware, software and telecommunications networks. It is thus both tangible (e.g. with servers, PC, routers and network cables) and intangible (e.g. with software of all types). IT facilitates the acquisition, processing, storing, delivery and sharing of information and other digital content. In the European Union, the term Information and Communication Technologies or ICT is generally used instead of IT to recognize the convergence of traditional information technology and telecommunications, which were once seen as distinct areas".* We also support the Orlikowski (2000) view of a distinction between technologies as *artefacts* (i.e. tangible) and *in use* (i.e. intangible), and the Brady, Saren and Tzokas (2002) argument that it is useful to adopt a focus "*on IT as the answer to business problems, on how it supports and changes business operations, rather than on a focus on the technological aspects of IT".* This more encompassing view will be contrasted with the current CMP approach to e-Marketing which has a dominant interactions and internet focus. This more extensive development of the ICT domain is to be expected as the technological developments continue apace and the assimilation and learning challenges are overcome internally in organisations, in the interactions between firms and customers in the marketplace, and ultimately in society as a whole.

ITs: The Early Years

Noting the evolutionary stages of database development, Nolan (1973). developed a four stages theory for IT growth in companies that relates to three distinct eras of IT developments: data processing, micro computing, and networking (Nolan, 1973; Nolan and Segar, 1993; Nolan and

Croson, 1995; Nolan, 1998). Similar to Venkatraman's (1994) description of 'organizational transformation', Tapscott and Caston (1993) identified three major shifts away from the original reliance on mainframe computers: (1) from personal to work-group computing; (2) from system islands to integrated systems; and (3) from internal to inter-enterprise computing. Zuboff (1988) coined the terms automation, information and transformation to explain a similar developmental trajectory. Rockart (1988) and Cecil and Hall (1988) also predicted that ITs would become inextricably intertwined with business, moving from the back end of the business system to the front end (i.e., from accounting to production to selling and marketing to servicing). They foresaw that ITs would help link companies and their suppliers, distributors, resellers and customers into what might be termed 'seamless' networks of relationships and interactions throughout an industry's entire value system. It was also predicted that such a transformation would not only add value to existing forms of products or services, but also create new forms of value (Normann and Ramirez 1993). The predicted challenges for managers in the 1990s would be to lead their organizations through the IT-enabled transformation process, and this would depend on both the degree of change that each company would deem to be necessary, and the expected payoffs (Morton 1991; Nolan, 1973; Zuboff, 1988). The growing pervasiveness of ICT in business, including among others the Internet, mobile communications, and databases, created opportunities for continuous two-way links with respect to products, services, information, processes etc. between companies and their individual customers, suppliers and other partners. This capacity for increased linkage and networking had profound effects on the "structure, strategy and competitive dynamics of industries" (Butler et al., 1997:6).

The overall rubric for IT assimilation was termed e-Business, with the combination of increasing computer information processing power and high-speed telecommunications seen as driving the fundamental changes occurring in organisations (Waters, 1999). King and Clift (2000) said e-Business "seamlessly moves data and information over open and closed networks, bringing together previously separate groups inside and outside companies. It improves company performance by connecting disparate value chains, which allows new relationships to be developed. While the definition of e-Business was all-encompassing, its subset (e-Commerce) was often used to denote an organization as having a website and/or selling products and/or services via the Internet. Beyond the somewhat limiting boundaries of the e-Commerce label, agreement developed that as new IT developments evolve basic assumptions about corporate organization, structure (Hagel and Singer 1999; Child and McGrath 2001), and form (networked and virtual) (Webster 1992; 1998; Achrol and Kotler 1999) would need to be revisited. More substantially, however, were the uncertainties about the full extent of ITs' impacts and opportunities (e.g., Evans & Wurster 1997), and how ITs would enable a firm to do things it could not do before (Day 1996). Malone and Laubacher (1998) commented: "What is

lagging behind technology is our imagination". From today's vantage point, we can also comment on the deficiency in marketers' abilities to maximize the potential value of ICT deployment not simply because of this lag in imagination, but because of a lack of sufficient insight and skills in appropriately organizing and managing the deployment of advanced ICTs.

The Role of ITs in Relationship Marketing

The arrival of relationship marketing in the 1990s, which, in its simplest form, is a progression from the dominant and often criticised traditional transactional marketing mix 4p's focus (Gronroos, 1997, Gummesson, 1987, 1998; Payne, 1995; Day and Montgomery, 1999; Baker, 2000) opened the debate between transactional and relational marketing culminating in the CMP framework (Coviello et al. 1997) suggesting a pluralistic approach incorporating both transactional and relational concerns. Throughout this debate many authors ascribed a dominant IT role in relationship marketing, (Webster, 1992, Thomas, 2000; Payne, 2001) but it has also become clear that ICT is crucial in transactional based marketing (Brady et al., 2002).

The use of ICTs in facilitating marketing relevant relationships, also termed 'electronic relations', has been found in a number of industries (Gummesson, 1994). In discussing 30 different forms of such relationships, Gummesson (2000) notes that *"'automated electronic relationship where the conduit is emphasised'*, though increasingly prominent in some industries, are only at the beginning of their development, and that they supplement rather than cancel the need for personal or social networks. Similarly, at the intra-organisational level, ICT can help to link the technical and market functions. He suggested that the concept of networks or virtual organisations, with an emphasis on IT as the basis for such organisational arrangements, is highly correlated to relationship marketing.

A range of articles in the Harvard Business Review suggest strategies for relationship marketing, particularly within the consumer market, which utilise IT extensively (Pine et al., 1995; Peppers and Rogers, 1995; Peppers et al., 1999). Peppers et al. (1999) note that relationship marketing sets specific IT demands in the guise of databases and data warehouses, integrated cross function systems, information systems containing standardised customer information, sales force automation, web sites, call centres, and integrated mass customisation manufacturing technology. Developments in IT applications which provide linkages between customers and companies, including asynchronous and synchronous interactions, widespread computer networks and ongoing and rapid information processing applications increase the role of IT in establishing and maintaining relationships. Schlegelmilch and Sinkovics (1998:166*)* said: "No longer is ICT used to automate well defined tasks within an organisation which can be left to ICT specialists and/or manufacturing people, but ICT is the framework and key instrument for designing and managing companies' external relationships".

We need to develop our understanding of ICT with the CMP framework because as McKenna (1999) noted "Marketing evolves as technology evolves". When interactive communications are matched to agile operations and manufacturing, such as in the computer industry (Shocker, Srivastava and Ruekert 1994; Kraemer, Dedrick and Yamashiro 2000), one effect is the possibility of *any thing, in any way, at any time, and any where* (McKenna 1991). In the process, firms become both one-to-one marketers that elicit and use information from each customer with respect to individual needs, preferences and other characteristics; and mass-customizers that provide customers with personalised goods or services (Pine, Peppers and Rogers 1995). A feature of such agile manufacturing and marketing is that the flexibility moves the focus of value creation away from the hardware technology (the product and service) and toward the interactive co-construction that combines software and networking possibilities (Port 1999), including improved customer acquisition (Hoffman and Novak 2000) and improved relationship building and loyalty (Jackson 1997; Hart, Smith, Sparks and Tzokas 1999).

Arguments that the evolution of marketing practices will be driven to a significant extent by the use of IT abound, and marketing's continuing and future development is seen as closely intertwined with technological issues (Webster, 1992; Schultz et al., 1996; Schmitz and Rovner, 1992; McKenna, 1991; Porter and Millar, 1985; Bruce et al., 1996; Deighton, 1996; Leverick et al., 1997). Academics and practitioners coined terms to try to capture this development, including 'one to one marketing' (McKenna 1999); 'web based' marketing (Loebbecke and Jelassi 1997); 'permission marketing' (Godin 1999); or terms which suggest that it is a new form of business (eCommerce or eBusiness); or even a type of marketing (emarketing). Brady et al. (2002) suggest that the spelling of marketing should be changed to MarkITing to reflect the widespread use of IT in contemporary marketing practice. Mintzberg et al. (1995:7) observed that after marketing strategy has remained the same for generations the arrival of IT will bring fundamental change. Holland and Naude (2004) argue that marketing should be viewed as an information handling problem due to the central role of IT. Bruce et al. (1996) contend that IT effects will be widespread and encompass changes to the structure and organisation of marketing. Venkatesh (1998) is of the view that there will be a radical new marketing era courtesy of IT, with the emergence of cyberspace or the networked world, changing how marketing is practiced, but leaving marketers with the challenge of how to practice marketing without being able to rely on traditional conceptions and practices.

Automation, Information, Transformation: Why Marketing did not Embrace IT

For much of the past two decades, empirical studies reveal that marketing was slower than other functions to adopt IT, and that IT use in marketing was predominantly for productivity or automational purposes

focused on routine or tactical activities (Palidawandana and Delfino, 1994; Domegan and Donaldson, 1994; Leverick et al., 1998; Bruce et al., 1996; Peattie and Peters, 1997; Ranchhod and Hackney, 1996; Hewson and Hewson, 1994; Fletcher and Wright, 1997). Shocker et al. (1994, p.151) said that "technology can be leveraged to gain competitive advantage. Or technological change can be resisted by entrenched interests to their own detriment". Despite the hype in the popular press during the 1990s about the revolutionary possibilities of IT-enabled transformation, it appears IT assimilation in marketing has occurred in a more evolutionary and measured fashion. As noted earlier, Zuboff (1988) coined the terms automation, information and transformation to explain the progressive impacts of ITs, and throughout much of the late 1980s and the 1990s IT was deployed to automate previously manual tasks. Zuboff's framework might suggest that as the benefits of automation in other departments are realized, and information becomes pivotal to organisational operations (see also Holland and Naude, 2004), we are moving from the informational to the transformational stage, and thus an increased use of IT by marketing should occur now and into the future. As Mazur (1994: vii) argued: "Most companies have experience installing computers in areas such as finance and production, where their ability to speed up production and eliminate waste can be measured accurately. But now as the focus shifts towards the recognition that information is the most precious of modern corporate resources and its exploitation the key to competitive survival, the spotlight falls on marketing; what it is and what it should be doing". Marketers were challenged by the emerging technological possibilities and as Mitchell (1994:185) noted 'marketing is the last bastion of management to embrace IT.' We believe that the reasons for this are partly to be found in concerns about the vagary of the impact of IT use for customer relations and market success. As Day (1996, p.151) pointedly asked: "Does interactivity represent the greatest marketing opportunity of all time or 101 ways to lose money?" Similarly, Jap and Mohr (2002, p.24) cautioned that "establishing successful B2B on-line strategies can be tough and complicated". We also believe, however, that it is not just uncertainty about the implications of technology use that have impeded marketers, but also a distinct gap in their typical skill set: integrating ICT successfully in marketing requires marketers to take an active managerial role far beyond their traditional areas of competence and authority. Successful deployment of ICT requires integration not just of technology but also of technologists and other organizational functions into coherent and concerted strategic and operational approaches to offering and delivering on value propositions for customers. (Fellenz & Brady, 2006)

Nolan (1998) also noted that it was apparent that most companies could manage the automation nature of the extant computerisation, but that strategic use of IT and higher-level decision making was creating major problems. This situation was compounded in the marketing department by the level of uncertainty as to the optimal technologies for marketing operations (McDonald, et al., 1993;

McDonald and Wilson, 1999). Many IT investments lacked a strategic dimension (Willcocks, 1996; Holtham, 1994), and focused on the rational/engineering perspective (Feeney 1997). The more transformational potential the considered and deployed ICTs possess, the more difficulties emerge in implementation and in assessing their ultimate benefits (Brady et al., 2002; Moriarty and Swartz, 1989; Shaw, 1994). Transformation takes time (Melody, 1997) and before transformational ICTs can be fully integrated into a firm's marketing efforts, a large and often dramatic shift in organisational culture may be required (Bruce et al., 1996). It was further argued that the automational and informational developments of ICT deployment need to occur before transformational use is possible (Brady et al., 2002).

Concurrent with the increasing but slow ICT assimilation during the 1990s, some viewed marketing practice as in a state of change, redirection, and refocus. It was described as searching for relevance and applicability, in need of a radical overhaul, and fragmented with a variety of different approaches, methods, and theories abounding (Reichheld, 1995; Brown et al., 1996; Brownlie and Saren, 1997; Murray et al., 2002; O'Driscoll, 1998; Brownlie et al., 1999; Day and Montgomery, 1999; Wensley, 1999; Saren, 2000).

Brookes et al. (2004) suggest that progress has been slower than predicted because 'learning by trial and error' was seen as acceptable by marketing practitioners.

Managers enumerate various cognitive-affective responses to their firm's efforts, which at one extreme may include expressions of disappointment, pessimism and skepticism concerning their firm's investments in ITs for reinforcement purposes. (Orlikowski, 2000) Another finding is that as managers categorize their own firm's investments in ITs according to three different categories (Orlikowski, 2000). Thus, leadership support is seen as ranging from guarded to hostile, reflecting a 'risk-avoidance' culture'; funding is often inadequate; and set-backs may be seen as a way to justify a halt to future initiatives. At the other extreme are expressions of anticipation, optimism and confidence concerning their firm's investments in ITs for transformation purposes, such as to 'change the rules of the game'. This latter group also appears to be proceeding on the basis of what Lynn, Monroe and Paulson (1996) term a 'probe and learn process'. They have the full support of their organization in terms of top leadership encouragement, reflecting an 'opportunity/change seeking culture'; the ready provision of necessary resourcing; and IT setbacks may be seen as part of the learning/advancement process. It appears clear that the latter environment enables marketers to not only develop a deeper knowledge and appreciation of the technical potential and the marketing utility of ICTs, but also to extend their understanding and skill set regarding the intra-organizational coordination and management activities required for full integration and deployment of ICTs into the organization's product and service offerings.

e-Marketing and IT within the CMP Framework

As discussed in article one of this special issue, Coviello et al.'s CMP framework was developed in 1997. Though they did not include IT as a separate dimension for all stages, it is implicit in many of the dimensions and is included at the database stage related to formality of relational exchange and managerial investment. In their research the use of IT and the impact of IT, both organisationally and within the industry sector, was included in the questionnaire and their companies were divided by technology base (high versus low technology). Findings from their research highlighted that services firms noted an increase in use of technology for advertising and communications (Coviello et al., 1997).

They also found industry specific dominant marketing practices related to the level of sophistication of a company's technology. They observed that those large, older consumer goods companies with more sophisticated use of technology had a transactional perspective or a database perspective. Industrial goods firms with low turnover usually had an interactions perspective, while joint or foreign owned companies with sophisticated use of technology operated a network perspective. Therefore, IT appears related to the level of development of relationship marketing. These findings in particular indicate the need for sophisticated IT as a prerequisite for network development. Commenting on their research findings, they observed that the impact of IT on marketing practices needed further research. It should be noted that at that stage the general term 'technology' as opposed to 'information technology' was used.

Subsequently, Coviello, Milley and Marcolin (2001) reviewed and amalgamated other frameworks (e.g., Day, 1998; Iacobucci and Hibbard, 1999) and interactive marketing themes (e.g., Berthon et al., 1999). In their review of the literature they identified four differing schools of thought on the impact of the internet and interactivity on marketing practice. One view captured by Gates (1999) and Venkatraman (2000) is based on the argument that *the Internet changes everything*. A second school of thought is that new ITs are *tools* to support or augment traditional approaches to marketing and strategy (Porter, 2001). A third view is that interactive technologies offer basically a new *channel* to the market (Ghosh 1998). A fourth, more holistic school of thought is that IT-enabled interactivity offers firms different opportunities according to their contexts (Cairncross 2000).

Coviello et al. (2001) incorporated a general technology dimension in the framework related to the different levels of IT integration in the organization (Orlikowski, 2000). When ITs are used to support/preserve current marketing efforts they *reinforce* the status quo; when ITs are used to extend/ improve existing marketing efforts they *enhance* the status quo; and when ITs are used to redefine/drive the marketing efforts they *transform* the status quo. A potentially important but still

underexplored aspect of these dynamics is the role of users' affective connections with technologies which can "offer richer explanations for the range of structural responses enacted by users as they engage with technology in practice". (Orlikowski, (2000, p.423; see also Huy, 2002).

After reviewing the IT/marketing interface literature, including the conceptual work of Blattberg and Deighton (1991) and others, and pattern-matching the findings of their content analysis back to the dimensions of the original framework of four marketing practices, Coviello, Milley and Marcolin (2001) added a fifth aspect of marketing practice associated with IT-enabled interactivity. Coviello et al. (2001:26) termed this e-Marketing (eM) and defined it as "*using the Internet and other interactive technologies to create and mediate dialogue between the firm and identified customers*". Through this definition eM was characterized as being reliant on technology to enable interactivity. However, they argue that the use of the term eM avoided the term 'interactive' in order to minimize possible confusion with one of the original aspects of marketing practice, namely 'Interaction Marketing', which had been defined as 'developing personal interactions between employees and individual customers'. A feature of this definition, say Coviello et al. (2001:26), is that "e-Marketing encompasses one-to-one marketing and allows for mass customisation". A fuller description of the e-Marketing dimension is shown in Table 2.

Table 2 e-Marketing Approach Classified by Exchange and Managerial Dimension

	e-Marketing
Purpose of Exchange	Information-generating dialogue between a seller and many identified buyers
Nature of Communication	Firm using technology to communicate "with" and "among" many individuals (who may form groups)
Type of Contact	Interactive (via technology)
Duration of Exchange	Continuous (but interactivity occurs in real time)
Formality in Exchange	Formal (yet customized and/or personalised via interactive technology)
Managerial Intent	Creation of IT-enabled dialogue
Managerial Focus	Managing IT-enabled relationships between the firm and many individuals
Managerial Investment	Internal operational assets (IT, website, logistics). Functional systems integration
Managerial Level	Marketing specialists (with) technology specialists and senior managers

Source: Adapted from Coviello et al., (2001)

Adding e-Marketing(eM) to the four types of marketing practice in the original CMP framework (Transaction Marketing [TM]; Database Marketing [DM]; Interaction Marketing [IM]; and Network Marketing [NM]) was the platform for further examination of the extent to which eM had become

integrated with the other practices and/or had evolved to where it was becoming a discrete practice. In a follow-up study of firms in New Zealand and the UK, Coviello, Brodie, Brookes and Palmer (2003) show that e-Marketing is clearly associated with Database, Interaction and Network Marketing. They further confirm that all five approaches can have an IT dimension, along stages of IT development perspective, though they also suggest that only the e-Marketing approach has the potential to use IT to transform their practices. Further analysis of the relationship between the strategic role of IT in the firm, as defined by Orlikowski (2000), show that more limited the roles of IT in the firm are associated with lower levels of eM in practice, and *vice versa*. For example, 63% of firms with low levels of eM use ITs in a reinforcing role, whereas 80% of firms with high levels of eM use ITs to either reinforce or transform their organizational status quo. Coviello et al. (2003:873) conclude that while the application of e-Marketing may not 'drive marketing practice', it may be seen as a boundary spanning function and could reflect the possibility "that information technology's ability to enable marketing practices is related to the role that ITs play in the firm as a whole".

In a qualitative study of the same database, Brookes, Brodie, Coviello and Palmer (2004) provide further evidence of the extent to which IT's are shaping marketing practices. Regardless of the industry type, a majority (49%) of firms still use ITs in a reinforcing capacity, with 31% stating that ITs are mainly used to enhance the status quo, and 20% saying ITs are being used for transforming purposes. This correlates well with recent empirically research in the hotel sector in Ireland which showed that 40% of firms view ICT as *reinforcing* the status quo, 47% are of the view that it *enhances* the status quo, and 13% view ICTs as *transforming* the status quo (O'Connor & Brady, 2006). This evidence once again indicates the low frequency with which ICTs transform operations, but also confirms that firms are gradually moving beyond an ICT emphasis on reinforcement matters (see also Brady et al., 2002).

Brookes et al. (2004) found that consumer goods companies are more heavily weighted toward the use of ITs in reinforcing or enhancing roles, while business-to-business firms are slightly more heavily weighted toward the use of ITs in a transforming role. This correlates to the fact that eM penetration is higher for B2B service firms and export firms (Brodie, 2000; see also Coviello et al., 2003, and Brookes et al. 2004).

These empirical results show that only a small proportion of firms consider themselves to be high users of technology, and few see themselves as having reached higher levels of IT-enabled business transformation. The results of this study also suggest that no one view of IT prevails. Whilst half the firms in the study currently use ITs as reinforcement tools, this could be considered the start of a longer process of change. It may also mean missed opportunities, especially if some firms currently have customers or other stakeholders who are more 'technology-ready' and willing to interact through

ITs. The move to the transformational or enhancing stage is challenging for marketers though it should be noted that virtually all firms anticipate they will be heavier users of ITs in the future. Brady et al. (2002) suggest that while efficiency gains are acceptable, marketers still need to move toward the transformational or what Nolan calls the 'network' era.

Coviello et al. (2001c)also show that the e-Marketing approach is not widely practiced 'at a high level', with firms concentrating on more traditional marketing practices, and that where it is practiced, it occurs in conjunction with, rather than as a separate marketing approach They suggest that the practical application of interactive technologies is in its infancy. They did find a strong positive relationship between database and e-Marketing practices and noted that database marketing was the only practice correlated with all other practices and may be viewed as the start of e-Marketing. Figure 1 links database marketing and e-Marketing approaches to IT practices, across the range of approaches, which is a similar approach to the focus taken by Brady et al. (2002) that will be discussed in a later section.

Figure 1   Direct Marketing and e-Marketing Relative to Other Aspects of Marketing

Transaction Marketing	Interaction Marketing	Network Marketing
Database Marketing ◄---------------		----------► e-Marketing
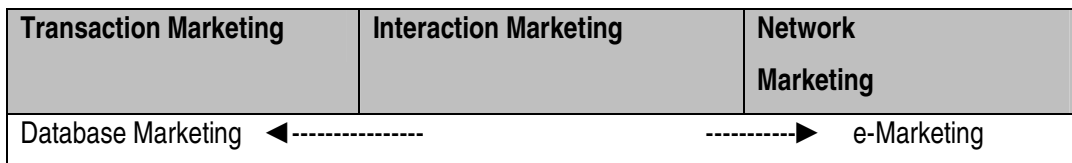
Source: Coviello et al., (2003)

These findings reflect the challenges in assimilation IT into marketing developments while the inclusion of these questions meant that the framework included a major IT dimension which was reflective of the situation when the researchers developed the research instrument. The authors were aware of the development aspects of IT and suggest that "decisions as to the implementation of e-Marketing will require a clear understanding of both the firm's capabilities to implement and support 'e' operations and their customer's preferences/capabilities to participate in electronically-interactive relationships" (Coviello et al. 2001: 24).

In the latest CMP study of e-Marketing penetration involving 212 US-based firms in 2002 and 139 US-based firms in 2005, Brodie, Winklhofer, Coviello and Johnston (2006) observed that, comparing the 2002 results with the 2005, they can concur with Barwise and Farley's (2005) argument that eM is 'starting to come of age'. In particular, they believe that, with an increase from 63% to 71% of firms reporting 'medium' or 'high' levels of eM, "it can be concluded that eM is no longer 'new' but rather, is becoming an established marketing practice within the majority of firms. While this level of

penetration is not as high as for the other marketing practices, it is approaching a comparable level, especially for DM and IM". (Brodie et al., 2006)

Consistent with Day and Ben (2005) and the more recent CMP studies, Brodie et al. (2006) also find that eM is emerging as a practice that is highly integrated with, and thus enhancing and supporting, existing marketing practices, rather becoming an independent practice. Though Porter (2001: 64) was only referring to the internet he did support this contention of the technology aligning with the established business to be viewed as an enabling technology. Consistent with findings from Wu, Mahajan and Balasubramanian (2003), Brodie et al. show a strong positive relationship between eM penetration and performance, especially 'acquisition' performance (such as sales growth and new customers gained) and customer retention performance with Brodie et al. (2006), concurring with Day and Ben's (2005) conclusions that firms adopting eM will perform better".

ICT and Marketing Practices: A Research Agenda

Following our evaluation of the collective and cumulative results from the IT component of the CMP we believe that the research agenda would benefit from increased additional attention on the following three areas:

1. An Extension of the CMP Framework to include the full range of ICTs available to marketers;
2. An Extension of the CMP framework to include IT along the Horizontal as well as the Vertical
3. Inclusion of ICT Management Skill Set in Marketing

An Extension of the CMP Framework to include the full range of ICTs available to marketers;

Despite the advances in ICT there is little understanding of the range of ICTs in marketing and the interrelated and connectivity of the ICTs. The sheer range of systems and software that can be classed as ICT usage in marketing is extensive (Brady and Saren 2005; Leverick et al. 1997). However, many marketing ICTs were not designed for or by marketing, and many of them are non-specific to the marketing department. Some attempts have been made to comprehensively identify them. McDonald and Wilson (1999) took an application perspective to show which marketing practices would be affected rather than the ICTs in use in marketing. Brady et al. (1999) originally suggested that there were 19 major ICTs in marketing (Brady et al., 1999) growing to 56 in 2002 and 106 at the current iteration and divided into a framework encompassing both the internal (informational) and external (interactional). (Brady et al., 2002; Brady and Saren 2005) (See Appendix 1).

While understandable, the narrow focus on the internet during the late 90s and early 2000 needs to be broadened to include the full range of ICTs now available to marketers. It is crucial that contemporary CMP frameworks explicitly incorporate a comprehensive technology dimension that can reflect the continually growing impact of a broad range of ICTs on CMP. One aspect of this may be to rethink labels such as e-Business, e-Commerce, m-Commerce, or e-Marketing. While they were appropriate and enabling at the time, for example by generating attention and debate, they have in many ways become quite limiting because they fail to recognise the comprehensive nature in which not just marketing, but other individual organisational functions as well as general management thinking must approach ICT deployment to maximise the realisation of its potential value promise.

Our suggestion is that a holistic overview of a range of individual ICTs would prove fruitful for the future. ICT is now viewed as a normal part of business operation, and there are difficulties in isolating IT from company process (Collis, 1994; Barney, 1991; Willcocks, 1996; Webber, 1993; Furness, 1996). Due to the interrelatedness and connectivity of IT, companies have difficulties 'unbundling' ITs (Heskett et al, 1990; Kench and Evans, 1991). IT could productively be viewed as a whole system rather than as separate technologies (Thomas et al., 1994; Ford and Saren, 1996; MacKenzie and Wajcman, 1999; Galliers, 1995). Isolating an ICT and attempting to measure its contribution to company level effects like growth rate, ROI and so on may pose difficulties, as these aggregate variables are insensitive to the effect of one ICT (Sethi and King, 1994), and causal links may be difficult to identify and confirm (Glazer, 1991; Leverick et al., 1997). ICT is viewed by managers in 'clusters', and it should be researched in that format (Clarke et al., 1995). Willcocks and Lester, (1996:32) observed that in reality this does not happen, and concluded that "only 20% of organisations surveyed included the totality of systems availability and capability and the needs of the organisation and department in their assessment". This is a pivotal issue for marketing, where, due to the multi-

operational nature of ITs and marketing operations, a singular IT resource can be used for a variety of marketing operations and across various departments (Barnes, 1993). Brady and her colleagues (Brady et al., 2002; Brady and Saren, 2005) developed a framework for the totality of ICTs within marketing (see appendix 1). The expansion of the original Coviello et al. (2001) technology questions could thus include sector specific ICT questions so both the holistic and the individual IT resources could be researched. An extended IT/ICT CMP questionnaire has been empirically tested (see O'Connor and Brady 2006) allowing for a full range of ICTs and their level of assimilation to be studied. The findings illustrate the horizontal role that ICT plays within marketing and shows evidence of ICTs use to support the current marketing effort, especially in relation to analysis and planning, database management, communications (internally and externally), plus sales-related activities. ICTs particularly extend/improve the marketing effort in relation to customer relationship management and self-service activities, and are also used to redefine/drive the marketing effort, particularly in relation to research. In terms of the marketers usage of ICTs they used many operational ICTs, and some marketing and sales-related ICTs. Supporting other research findings, the more automational ICTs are used extensively, including: online booking system, finance and accounting system and front office reservation system. The most commonly used marketing ICTs were email, website, Internet and a customer database. For sales, the most commonly used were mobile phone, laptop and customer database. Further analysis reflected that marketers view ICT as both a variety of separate applications and as a communication/promotional medium. However, while the preliminary findings suggest that marketers are embracing ICTs, particularly in relation to automational hotel operations, many respondents indicate a lack of a marketing dimension to their systems. As further evidence of their lack of sophisticated use many respondents ICT and the Internet were almost synonymous

In summary, in the CMP work to date the focus of the IT dimension has largely been on interactivity and emarketing and the internet reflecting the dominant technology of that time. We suggest that a development of the CMP framework to include a wider ICT infrastructure reflective of the rapid technological developments and keeping pace with the range of ICTs available to marketers.

An Extension of the CMP framework to include IT along the Horizontal as well as the Vertical

Another methodological issue is the inclusion of IT across the marketing approaches reflective of the reality of ICT use in marketing practice. For example marketing has a dominant information processing role (Holland and Naude, 2004) across all domains of business and this is not specifically addressed in the CMP studies which have a more interactive orientation. Further, as noted in the last section, developments in IT suggest that firms may need to think beyond a functional marketing-centric interactivity perspective. As Day and Montgomery (1999:7) noted, a wider perspective on

interconnectivity is required: "No one will be immune from the second-order consequences of interconnectivity for exchange processes, market structure, competitive processes and organisational activates". One suggestion is to include ICT within the relational exchange and managerial dimensions (see table 3). The next stage would be to operationalise the questions to form the bases for this construct within the research instrument.

Table 3: An ICT Dimension to the Marketing Approaches Classified by Relational Exchange and Managerial Dimension

	Transactional Perspective				Relationship Perspective
	Transaction Marketing	**Database Marketing**	**Emarketing**	**Interaction Marketing**	**Network Marketing**
Relational exchange dimensions					
ICT Orientation					
Managerial Dimension					
ICT Investments					

Source: Adapted from Brady et al. (2002)

We argue for both individual case study research and industry-wide quantitative research to examine the extent to which firms are pursuing vertical versus horizontal IT strategies, and the performance payoffs, based on the Brodie et al. (2006) work. The finding could then be used to widen the scope of the current CMP questionnaire with respect to IT usage and impacts, and to also reflect the argument that network organizations by definition need highly sophisticated information and decision support systems to replace the traditional hierarchy (Achrol 1991; Cravens and Piercy 1994: Powell 1990; Webster 1992) regardless of marketing practice.

Inclusion of ICT Management Skill Set in Marketing

Part of the most immediate requirements for marketers trying to deploy ICT more comprehensively is the ability to constructively deal with the increased information processing and analytical requirements. ICT oriented marketing will rely less on experience, intuition and guesswork and much more on the information provided by IT systems monitoring every stage of the product/service delivery through to consumption. The increased information provided by ICT must be matched with the skills of marketers to analyse the data supplied through the supply chain and across every facet of marketing. We argue that the ways in which marketing is taught and practiced need to

reflect these critical changes and developments. At present, the changing requirements for marketers are often overlooked, and emerging opportunities are underutilised and underexploited within organisations, in large part due to lack of skills rather than lack of technology. "*In the future expertise in information systems, database management, software development and other technologies will become crucial'* (Struse, 2000:5) for marketers.

There are major challenges for marketers to utilise sophisticated ICT systems. ICT systems present challenges to the marketing mindset, the complexity and qualitative nature of marketing decisions and restrict and constrain marketing thought, by forcing it into particular, often highly structured rational and systematic processes (Tenkasi and Boland, 1996; Piercy, 1981). ICT introduces information in a structured form rather than in what Piercy (1981:4) refers to as the *'messy non-uniform semi-processed form'* in which marketers traditionally receive and utilize information. At the same time, ICT usage could damage marketing by stifling critical aspects of marketing, including creativity, intuition and judgement (Piercy, 1981; Leverick et al., 1998; Peattie and Peters, 1997), unless marketers recognise and adapt to the changing requirements.

The technical requirements of marketing are for ICT systems that can support both routine and non-routine, more creative tasks. As Strassman (1985; 21) notes *"*the principal challenge of IT is how to deal with unstructured and unpredictable office work". Developments of MIS, EIS and DSS were attempts to transform transactional information systems into aids in decision-making, though there have been mixed results (e.g., Saaksjarvi and Talvinen, 1993). IT in marketing has not progressed to assisting in semi-structured tasks and is 'biased towards either purely numerical or purely textual work' (Hewson and Wilson, 1994:372). What is needed are marketers that can think 'like science fiction writers' (Sterne, 1995: 295) or 'who think out of the box' (Schlegelmilch and Sinkovics, 1998:169) and can help to proactively bridge the often still existing gaps between the support ICT can offer, and the demands of the marketing task environment.

Beyond the specific technological and technology management skills discussed above, we also see two additional areas in which marketers need to become much more adept in order to both help integrate and deploy ICT in marketing practice, and to make such ICT usage successful from organisational and strategic perspectives. First, marketers need to recognize that their task includes more that the traditional boundary spanning between firm and external customers. While the role of marketers as proponents of customer views is still central, they need to recognise that they can also contribute to their firms' success by helping to integrate the differing, at present too often competing technological (e.g., technologists in IT or R&D departments), economic (e.g., financially and shareholder-value oriented managers in finance or similar functions), and customer-oriented (e.g., customer centric thinkers in marketing departments) perspectives (Fellenz & Brady, 2006). Upon

recognising this challenge marketers may be "uniquely placed to fill this important role" (Fellenz & Brady, 2006: 16) but need to be equipped with relevant skill-sets, and supported through appropriate organisational arrangements.

Second, marketers need to recognize that issues related to internal change management underly many of the findings from CMP studies. Huy (2002) argues that middle managers are critical to the success of organizational change, by being personally committed to championing the change and by attending to the emotional reactions and concerns of others, especially subordinates. The responses in the Brookes et al. (2004) CMP study suggest that mid-level managers are likely to be more emotionally attuned to, and supportive of, IT-related change that is more transformational in character. By contrast, many firms may have sound strategic, financial, or other reasons for currently investing in ITs for reinforcement or enhancement purposes. How to ensure that middle management champion these changes may be a critical issue.

The issue of internal change management could be considered integral to the wider internal relationship marketing function within a firm. Whilst internal relationship marketing is a relatively undeveloped construct, Gummesson (2002) suggests more firms should focus on their internal "network of relationships and projects" if IT-enabled interactivity or wider ICT changes are to be implemented smoothly. Jap and Mohr (2002) agree, saying: "e-Commerce technologies cannot be successfully leveraged without considering the organizational relationships in which the technologies are being embedded". This is an area that needs further exploration, in order for both academics and marketers to better understand both the underlying obstacles to IT-adoption (Day 1996; Desai, Fletcher and Wright 1998), and key criteria for success (Poolton and Barclay 1998).

Conclusion

Most commentators ascribe a role for ICT within marketing. There is some suggestion that ICT in marketing is a fundamental and major change (Mintzberg et al., 1995) while others suggest that it will be the catalyst for a new marketing paradigm. *'Contemporary IT-enabled marketing innovations mean that current marketing paradigms are inadequate in their explanatory and predictive powers'* (Holland and Naude, 2004:167). This paper supports the acceptance of a pluralism of marketing approaches within contemporary marketing practice including transaction and relationship marketing (database, emarketing, interactive and network) (Coviello et al., 2002) and reviews the historical development of original conceptions such as eMarketing towards more holistic visions of ICT within the CMP framework. Reviewing the role of ICT we conclude that relationship marketing has always had an ICT dimension (Webster, 1992, Thomas, 2000; Payne, 2001), but that ICT has also always been crucial in transactional based marketing (Brady et al., 2002) and thus has both a vertical (emarketing) and a

horizontal (ICT) role or perspective. Regardless of the dominant focus of marketing within an organisation, marketing practitioners increasingly have an ICT requirement within their marketing practice. This paper calls for a more substantive research agenda exploring the expanded role of ICT in marketing, the further development of ICT in the framework and the exploration of the relevant management and organisational skills sets for marketers. ICT is now not only a normal but a central part of marketing practice and it is important that marketing academics identify, understand, and cater to the conceptual, theoretical and educational requirements of those practitioners that try to successfully deploy an increasingly large range of complex ICTs both internally in their organizations, and at the customer interface.

In conclusion, the CMP framework to date has been reflective of contemporary issues and the technological orientation of its time. It now needs to be updated to capture the expanded technological development to allow researchers to study the contemporary environment and to be reflective of and responsive to marketing practice.

References:

Achrol, R., (1991) Evolution of the marketing organisation; new forms for turbulent environments, *Journal of Marketing*, 55, 77-93

Achrol, R.S. (1997), Changes in the Theory of Interorganizational Relations: Toward a Network Paradigm, *Journal of the Academy of Marketing Science*, 25, 1, 56-71.

Achrol, R., and Kotler, P., (1999) Marketing in the network economy, *Journal of Marketing*, 63, 146-163

Baker, M., (2000) *Marketing Theory; A Students Text*, Business Press Thomson Publishing, Australia

Barney, J. B., (1991) Firm resources and sustained competitive advantage, *Journal of Management*, 17, 99-120

Barnes, J. G., (1993) New technologies, new markets and changing marketing practice, Irish Marketing Review, 45-51

Barwise, P. & Farley J. U. (2005). The State of Interactive Marketing in Seven Countries: Interactive Marketing Comes of Age. *Journal of Interactive Marketing*, 19(3), 67-80.

Brady, M., Saren, M., & Tzokas, N. (2002), Integrating Information Technology into Marketing, *Journal of Marketing Management*, 18, 1-23.

Brady, M., and Saren, M., (2005) A Framework for ICT within Contemporary Marketing Practice: The Information and Interaction Dimensions, Academy of Marketing (UK) Conference, Dublin, July, CDrom, Paper Number 414

Brady, M., Saren, M., and Tzokas, N., (1999), 'The Impact of Information Technology on Marketing: An Evaluation', Management Decision, 37(10), 758-766

Berthon, P., Hulbert, J.M. and Pitt, L.F. (1999), Brand Management Prognostications, *Sloan Management Review*, Winter, 53-65.

Blattberg, R., and Deighton, J., (1991) Interactive marketing: exploiting the age of addressability, *Sloan Management Review*, Fall, 5-14

O'Connor, M., and Brady, M., (2006) The Hotel Sector In Ireland – Technology-Based Marketing Enterprises? Irish Academy of Management Conference, University of Cork, September,

Braun, E., (1998) Technology in Context, Technology Assessment for Managers, Routledge, London

Brodie, R., (2000) Contemporary marketing practice: Factors That are Shaping Change. *Conference proceedings of Anzmac*, Auckland

Brodie, R.J., Winklhofer, H., Coviello, N.E. and Johnston. W.J. (2006), Is e-Marketing Coming of Age? An Examination of the Penetration of eM and Firm Performance, *Journal of Interactive Marketing*, (in press).

Brookes, R. W., Brodie, R. J., Coviello, N. E. and Palmer, R. A. (2004), How Managers Perceive the Impacts of Information Technologies on Contemporary Marketing Practices Reinforcing, Enhancing or Transforming?, *Journal of Relationship Marketing*, Vol 3, Iss 4, pp 7-26

Brookes, R. W., Brodie, R. J., Coviello, N. E. and Palmer, R. A. (2004), How Managers Perceive the Impacts of Information Technologies on Contemporary Marketing Practices Reinforcing, Enhancing or Transforming?, *Journal of Relationship Marketing*, Vol 3, Iss 4, pp 7-26

Brown, S., Bell, J., and Carson, D., (1996) *Marketing Apocalypses - Eschatology, Escapology and the Illusion of the End*, Routledge, London

Brownlie, D., and Saren, M., (1997) Beyond the one dimensional marketing manager, *International Journal of Research in Marketing*, 28(3), 6-12

Brownlie, D., Saren, M., Wensley, R., and Whittington, R., (1999) *Rethinking Marketing – Towards Critical Marketing Accountings*, Sage Publications, London

Bruce, M., Leverick, F., Littler, D., and Wilson, D., (1996), The changing scope and substance of marketing - the impact of IT. In Conference Proceedings from the *European Academy of Marketing Conference - Marketing for an Expanding Europe*, Vol. 1. Budapest University of Economic Science, 185-204

Butler P., Hall T., Hanna A., Mendonca L., Auguste B., Manyida J., and Sahay A., (1997) A revolution in interaction, *McKinsey Quarterly*, 1, 4-23

Cecil, J. and Hall, E. (1988), When IT Really Matters to Business Strategy, *The McKinsey Quarterly*, Autumn, 2-26.

Chen, J. S., Ching, R. K. H. (2004), An empirical study of the relationship of IT intensity and organizational absorptive capacity on CRM performance, *Journal of Global Information Management,* Jan-Mar, Vol. 12, 1-17.

Child, J. and McGrath, R.G. (2001), Organizations Unfettered: Organizational Form in an Information-Intensive Economy, *Academy of Management Journal*, 44, (6), 1135-1148.

Collis, D. J., (1994) Research note: how valuable are organizational capabilities? *Strategic Management Journal*, 15, 143-152

Conklin, D. and Tapp., L. (2000), The Creative Web: A New Model for Managing Innovation, *Ivey Business Journal,* May-June, 60-68.

Coviello, N., Brodie, R., and Munro, H., (1997) Understanding contemporary marketing: development of a classification scheme, *Journal of Marketing Management*, 13, 501-522

Coviello, N.E., Milley, R. and Marcolin, B. (2001), Understanding IT-enabled interactivity in Contemporary Marketing, *Journal of Interactive Marketing*, 15 (4), 18-33.

Coviello, N.E., Brodie, R.J., Brookes, R.W. and Palmer, R.A. (2003), Assessing the Role of e-Marketing in Contemporary Marketing Practice, *Journal of Marketing Management*, 19, 857-881.

Cravens, D. W., Piercy, N. F. (1994), Relationship marketing and collaborative networks in service, *International Journal of Service Industry Management,* Vol 5, Iss 5, 39-54.

Davis, T. (1998), Effective Supply Chain Management, *Sloan Management Review*, 34, Summer, 35-46.

Day, G. (1996), comments pp. 161-162 in: The Future of Interactive Marketing, Harvard Business Review, November-December, 151-162.

Day, G., (1998) Organising for interactivity, *Journal of Interactive Marketing*, 12(1), 47-53

Day, G. S. & Bens, K. J. (2005). Capitalizing on the Internet Opportunity. *Journal of Business & Industrial Marketing*, 20(4/5), 160-168.

Day, G., and Montgomery, D., (1999) Charting new direction for marketing, *Journal of Marketing*, 63, 3-13.

Deeter-Schmelz, D. R., & Kennedy, K.N. (2004), Buyer-seller relationships and information sources in an e-commerce world, *The Journal of Business & Industrial Marketing,* Vol. 19, Iss. 3, 188-196.

Deighton, J. (1996a), The Future of Interactive Marketing, *Harvard Business Review*, March-April, 133-141.

Deighton, J. (1996), The Future of Interactive Marketing, *Harvard Business Review,* November-December, 151-162.

Dempsey, M., (2000) Customer-focus: embracing the CRM trend, The Financial Times, http://www.ft.com/ftsurverys.q3e16.htm

Desai, C., Fletcher, K. and Wright, G. (1998), Barriers to Successful Implementation of Database Marketing: A Cross Industry Study, *International Journal of Information Management*, 4, 265-276.

Domegan, C., and Donaldson, B., (1994) Customer service and information technology. In Lambkin, M., and Meenaghan, T., (Eds) *Perspectives on Marketing Management in Ireland*, Oak Tree Press, Dublin, 100-119.

Downes, L. and Mui, C. (1998), *Unleashing the Killer App*, Harvard Business School Press, Boston.

Evans, P., & Wurster, T.R. (1997). Strategy and the New Economics of Information. *Harvard Business Review,* September-October, 71-82.

Fellenz, M.R., & Brady, M. (2006). Why the Tail Should Not Wag the Dog: Integrating the Deployment of Information and Communication Technologies (ICT) in Service Innovation and Delivery, *Proceedings of the Irish Academy of Management Annual Meeting*, September 2006, Cork, 1 – 25.

Fletcher, K., and Wright, G., (1997) Strategic and organisational determinants of information system sophistication; an analysis of the uptake of database marketing in the financial services industry, *European Journal of Information Systems*, 6, 141-154

Fletcher, K., and Wright, G., (1997) The challenge of database marketing, *The Journal of Database Marketing*, 5(1), 42-52

Ford, D., and Saren, M., (1996) *Technology Strategy for Business*, International Thomson Business Press, London

Frederick, H. (2000), Doo WAP, *Unlimited*, August, 8-82.

Geiger, S. & Turley, D. (2005), Personal Selling as Knowledge-Based Activity: Communities of Practice in the Sales Force, *Irish Journal of Management*, Vol. 26, Iss. 1, 61-71.

Furness, P., (1996) Editorial, *Journal of Targeting, Measurement and Analysis for Marketing*, 4(4), 294

Galliers, R. D., (1995) A manifesto for information management research, *British Journal of Management*, 6, 45-52

Geiger, S., and Martin, S., (1999) Relationship marketing, the internet and Irish business – a handsome threesome. In Conference Proceedings of the IMP, Dublin

Ghosh, S., (1998) Making business sense of the internet, *Harvard Business Review*, March/April, 127-135

Glazer, R., (1991) Marketing in an information intensive environment: strategic implications of knowledge as an asset, *Journal of Marketing*, 55, 1-19

Godin, S. (1999) *Permission marketing: turning strangers into friends, and friends into customers*, New York: Simon & Schuster.

Gordon, I. (1998), *Relationship Marketing: New Strategies, Techniques and Technologies to Win the Customers You Want and Keep Them Forever*, Toronto: Wiley & Sons.

Greenwald, J. (2000), J'Adore Content, *TIME*, June 26, 28-29.

Gronroos, C., (1997) Keynote paper: from marketing mix to relationship marketing – towards a paradigm shift in marketing, *Management Decision*, 35(4), 322-339

Gummesson, E., (1987) The new marketing - developing long term interactive relationships, *Long Range Planning*, 20(4), 10-20

Gummesson, E., (1994) Making relationship marketing operational, *International Journal of Service Industry Management*, 5(5), 5-20

Gummesson, E., (1998) Implementation requires a relationship marketing paradigm, *Academy of Marketing Science Journal*, Summer, 242-249

Gummesson, E. (1999), *Total Relationship Marketing – Rethinking Marketing Management: From 4-Ps 30Rs*, Oxford: Butterworth-Heinemann.

Gummesson, E. (2002), Relationship Marketing in the New Economy*, Journal of Relationship Marketing*, 1, (1), 37-57.

Hacki, R. and Lighton, J. (2001), The Future of the Networked Company, *The McKinsey Quarterly*, No.3, 26-39.

Hagel, J. and Singer, M. (1999), Unbundling the Corporation, *Harvard Business Review*, March-April, 133-141.

Hagel, J. and Brown, J.S, (2001), Your Next IT Strategy, *Harvard Business Review,* October, 105-143.

Hall, P. (1998), *Cities in Civilization*, London: Phoenix.

Hart, S., Smith, A., Sparks, L. and Tzokas, N. (1999), Are Loyalty Schemes a Manifestation of Relationship Marketing?, *Journal of Marketing Management*, 15, 541-562.

Heskett, K. L., Sasser, E. W., and Hart, C., (1990) *Service Breakthroughs, Changing The Rules of The Game*, The Free Press, New York

Hewson, N., and Hewson, W., (1994) *The Impact of Computerised Sales and Marketing Systems in the UK* (4th Edition), HCG Publishing, Buckinghamshire

Hewson, W., and Wilson, H., (1994) Information management in theory and practice - exploring the alignment of information technology investment with sales and marketing strategies. In Conference Proceedings from the *B.A.M. Conference*, Cranfield School of Management, 372-373

Hoffman, D.L. and Novak, T.P. (2000), How to Acquire Customers on the Web, *Harvard Business Review*, May-June, 179-188.

Holland, Christopher P., Naude, Pete. (2004) The metamorphosis of marketing into an information handling problem, *The Journal of Business & Industrial Marketing*. Santa Barbara: Vol. 19, Iss. 3; pp. 167-178

Holtham, C., (1994) *IT in Marketing*, Alfred Waller in association with UNICOM, Henley on Thames

Huy, Q.N. (2002), Emotional Balancing of Organisational Continuity and Radical Change: The Contribution of Middle Managers, *Administrative Science Quarterly,* 47 (March), 31-69.

Iacobucci, D. & Hibbard, J. D. (1999), Toward an encompassing theory of business marketing relationships (BMRS) and interpersonal commercial relationships (ICRS): An empirical generalization, *Journal of Interactive Marketing*, Summer, Vol. 13, Iss. 3, 13-23.

Jackson, K. (1997), VW to Car Buyers: Join the Club, *Automotive News*, Feb. 3, p.3.

Jap, S.D. and Mohr, J.J. (2002), Leveraging Internet Technologies in B2B Relationships, *California Management Review*, 44 (4), Summer, 24-38.

Kench, R., and Evans, M., (1991) IT: the information technology dichotomy, *Marketing Intelligence and Planning*, 9(5), 16-23

King, P. and Clift, J. (2000), *Time to Distinguish Between E-business and E-commerce*, in FT Guide to Digital Business, ed. R. Walters, FT Publishing, London, Autumn, 1-29.

Kraemer, K.L., Dedrick, J. and Yamashiro, S. (2000), Refining and Extending the Business Model with Information Technology: Dell Computer Corporation, *The Information Society*, Vol.16, No.1, January-March, 5-21.

Leavitt, H., and Whisler, T., (1985) Management in the 80s, *Harvard Business Review*, 63(1), 65-71

Leverick, F., Littler D., Wilson, D., and Bruce, M., (1997) The role of IT in reshaping of marketing, *Journal of Marketing Practice: Applied Marketing Science*, 3(2), 87-106

Leverick, F., Littler, D., Bruce, M., and Wilson, D., (1998) Using information technology effectively: a study of marketing installations, *Journal of Marketing Management*, 14, 927-962

Li, E., (1995) Marketing information systems in the top US companies, a longitudinal analysis, *Information and Management*, 28, 13-31

Loebbecke, C., Jelassi, T. (1997) Business Process Redesign at CompuNet - Standardizing Top-Quality Service Through Information Technology, *The Journal of Strategic Information Systems (JSIS)*, 6(4), 339-359.

Loebbecke, C., Jelassi, T. (1997) Concepts and technologies for virtual organizing: the Gerling journey, *European Mangement Journal (EMJ)*, 15(2), 138-146.

Lynn, G.S., Monroe, J.G., & Paulson, A.S. (1996), Marketing and Discontinuous Innovation: The Probe and Learn Process. *California Management Review*, 38 (3), 8-37.

McAfee, A. (2005), Willl Web Services Reallly Transform Collaboration, MIT Sloan Management Review, Winter, 78-84. McKenna, R. (1995), Real-Time Marketing, *Harvard Business Review*, July-August, 87-98.

MacKenzie, D., and Wajcman, J., (1999) Introductory essay; the social shaping of technology. In MacKenzie D., and Wajcman, J., (Eds) *The Social Shaping of Technology*, (2nd Edition), Open University Press, Buckingham, 3-27

Malone, T.W. and Laubacher, R.J. (1998), The Dawn of the E-Lance Economy, *Harvard Business Review*, September-October, 145-152.

Mazur, L., (1994) Evolution in the Workplace, Marketing Guide to Choosing and Using IT, *The Economist*, September 15th, vi-vii

McAfee, A. (2005), Willl Web Services Reallly Transform Collaboration, *MIT Sloan Management Review*, Winter, 78-84.

McDonald, M., Hewson, W., and Wilson, H., (1993), *Emerging Information Technologies - A Marketing Opportunity*, HCG Publications, Buckinghamshire, 157-160

McDonald M., and Wilson, H., (1999) Improving marketing effectiveness through information technology, *Working Paper- Cranfield School of Management*, March, 30- 45

McKenna, R., (1991) Marketing is everything, *Harvard Business Review*, Jan-Feb, 65-79

McKenna, R., (1991) *Relationship Marketing Successful Strategies for the Age of the Customer*, Addison-Wensley Publishing, Co., Reading MA

McKenna, R., (1999) *Real Time Marketing*, Harvard Business School Press, Boston

Melody, W. H., (1997) Identifying priorities for building distinct information societies, *The Economic and Social Review*, 28(3), 177-184

Mintzberg, H., Quinn, J. B., and Ghoshal S., (1995) *The Strategy Process*, European Edition, Prentice Hall, London

Moriarty, R. T., and Swartz, G. S., (1989) Automation to boost sales and marketing, *Harvard Business Review*, Jan-Feb, 100-108

Morton M.S. ed. (1991), *The Corporation of the 1990s: Information Technology and Organizational Transformation*, New York: Oxford University Press.

Murray, J., O'Driscoll, A., and Torres, A., (2002) Discovering diversity in marketing practice, European Journal of Marketing,Vol. 36, Iss. 3; p. 373- 91

Naude, P., and Holland, C., (1997) What are the benefits of IT-based supply chain relationships? In Conference proceeding of the 5th International Colloquium on Relationship Marketing, Cranfield University, November, 1-24

Nolan, R., (1973) Computer data bases: The future is now, *Harvard Business Review*, September-October, 98-112

Nolan, R., (1998) Connectivity and control in the year 2000 and beyond, *Harvard Business Review*, July-August, 3-14

Nolan, R., and Croson, D., (1995) *Creative Destruction, Six Stages for Transforming the Enterprise*, Harvard Business School Press, Boston

Nolan, R., and Segar, K., (1993) Note on information technology and strategy, *Harvard Business School Paper*, March 1, 9-193-137, 1-15

Normann, R., and Ramirez, R. (1993), From Value Chain to Value Constellation: Designing Interactive Strategy, *Harvard Business Review*, July-August, 65-77.

O'Driscoll, A., (1998) The art and science of direct marketing. In Lawlor, M., and Keane, J., (Eds) *Direct Marketing in Ireland*, Oak Tree Press, Dublin, 9-40

Orlikowski, W.J. (2000). Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations. *Organizational Science*, 11, (4), 404-428.

Palidawandana, D., and Delfino, M., (1994) Marketing and IT: A study related to the north east of England. In Conference Proceedings of the *10th IMP Meeting the Challenges of New Frontiers*, Groingen, The Netherlands, 117-132

Payne, A., (1995) *Advances in Relationship Marketing*, The Cranfield Management Series, Kogan Page, London

Payne, A., (2001) Customer focus – accelerating success, introducing new research and practical lessons from star performers, PA Consultancy Group, 1-20

Peattie, K., and Peters, L., (1997) The marketing mix in the third age of computing, *Marketing Intelligence and Planning*, 15(3), 142-150

Peppers, D. & Rogers, M. (1995) A new marketing paradigm: Share of customer, not market share, *Planning Review*, Mar/Apr, Vol. 23, Iss. 2, 14-18.

Peppers, D., Rogers, M., and Dorf, B., (1999) Is your company ready for one-to-one marketing? *Harvard Business Review*, January-February, 151-160

Piercy, N., (1981) Marketing information – bridging the quicksand between technology and decision-making, *The Quarterly Review of Marketing*, Autumn, 1-15

Pine, B.J., Peppers, D. and Rogers, M. (1995), Do you want to Keep your Customers Forever?, *Harvard Business Review*, March-April, 103-114.

Poolton, J. and Barclay, I. (1998) New Product Development from Past Research to Future Applications, *Industrial Marketing Management*, 27, 197-212.

Port, O. (1999), Customers Move into the Driver's Seat, *Business Week*, Oct. 4, 58-60.

Porter, M., (2001) Strategy and the Internet, *Harvard Business Review*, March, 63-78

Porter, M.E. and Millar, V.E. (1985), How Information Gives You Competitive Advantage, *Harvard Business Review*, July-August, 149-160.

Puffer, S.M. (1999), Global Executive: Intel's Andrew Grove on Competitiveness, *Academy of Management Review,* 13, 1, 15-24.

Quinn, C. (2001), *How Leading-Edge Companies are Marketing, Selling, and Fulfilling over the Internet*, in Internet Marketing: Readings and Online Resources, ed. P. Richardson, McGraw-Hill Irwin, New York, 23-34.

Ranchhod, A., and Hackney, R., (1996) Marketing through information technology: from potential to virtual reality. In Conference Proceedings of the *Academy of Marketing 31st Annual Conference*, Manchester, Vol. 1, July, 781-791

Reichheld, F., (1995) Loyalty and the renaissance of marketing. In Payne, A. Christopher, M., Clark, M., Peck, H., (Eds) *Relationship Marketing for Competitive Advantage*, Butterworth Heinemann, London, 232-247

Rockart, J. (1988). The Line Takes Leadership – IS Management in a Wired Society. *Sloan Management Review*, Summer, 57-64.

Rush, W. (2005), Social machines, *Technology Review.com*, August. http://www.technologyreview.com/articles/05/08/issue/feature_social.asp?p=0

Saaksjarvi, M. V. T. & Talvinen, J. M. (1993), Integration and effectiveness of marketing information systems, *European Journal of Marketing,* Vol. 27, Iss. 1, 64-80.

Saren, M., (2000) Marketing Theory. In Baker, M., (Ed) *Marketing Theory: A Students Text*, Business Press Thompson Publishing, London, 21-42

Schlegelmilch, B., and Sinkovics, R., (1998), Viewpoint: marketing in the information age - can we plan for an unpredictable future? *International Marketing Review*, 15(3), 162-170.

Schmitz, R., and Rovner, M., (1992) A world of diminishing distance: how information technology is collapsing the transaction barriers between marketers and consumers, *Marketing and Research Today*, November, 227-234

Schultz, D., Tannenbaum, S., and Lauterborn, R., (1996) *The New Marketing Paradigm- Integrated Marketing Communications*, NTC Business Books, New York.

Sethi, V., and King, W., (1994) Development of measures to assess the extent to which an information technology application provides competitive advantage, *Management Science*, 40(12), December, 1601-1627

Shaw, R., (1994) *How to Transform Marketing Through IT*, Business Intelligence, London

Shocker, A.D., Srivastava, R.K. and Ruekert, R.W. (1994), Challenges and Opportunities Facing Brand Management: An Introduction to the Special Edition, *Journal of Marketing Research*, 31, May, 149-158.

Speier, C., & Venkatesh, V. (2002), The hidden minefields in the adoption of sales force automation technologies, *Journal of Marketing*, Jul., Vol. 66, Iss. 3, 98-112.

Sterne, J., (1995) *World Wide Web Marketing - Integrating the Internet into your Marketing Strategy*, John Wiley and Sons, Boston

Strassman, P., (1985) *Information Payoff- The Transformation of Work in the Electronic Age*, Free Press, New York

Struse, D. (2000) Marketing Research's top 25 influences, *Marketing Research,* Winter 1999/Spring 2000, Vol 11, Iss 4, 4-10.

Taher, A., Leigh, T.W. and French, W.A. (1996), Augmented Retail Services: The Lifetime Value of Affection, *Journal of Business Research*, 35, 217-228.

Tapscott, D. and A. Caston (1993), *Paradigm Shift: The New Promise of Information Technology*, New York: McGraw-Hill.

Tenkasi, R., and Boland, R., (1996) Exploring knowledge diversity in knowledge intensive firms; a new role for information systems, *Journal of Organisational Change Management*, 9(1), 45-68

The Economist (1999), Direct Hit, January 9, 57-59.

The Economist (2000a), Dotty about Dot.Commerce?, E-Commerce Survey, February 26, 1-38.

The Economist (2000b), Europe's Mobile Telephony, July 8, 73-76.

The Economist (2004), Special Report: Mobile Phones, May 1, 65-68.

The Economist (2005), A Survey of Consumer Power: Crowned at Last, April 2, 9, 1-16.

Thomas, M., (2000) Commentary – princely thoughts on Machiavelli, marketing and management, *European Journal of Marketing*, 34 (5/6), 524-537

Thomas, R., Saren, M., and Ford, D., (1994) Technology assimilation in the firm; managerial perception and behaviour, *International Journal of Technology Management*, 9(2), 227-241

Venkatesh, A., (1998) Cybermarketscapes and consumer freedoms and identities, *European Journal of Marketing*, 32(7/8), 664-676

Venkatraman, N. (1994), IT-Enabled Business Transformation: From Automation to Business Scope Redefinition, *Sloan Management Review*, Winter, Vol. 35, Iss. 2, 73-87.

Venkatraman, N. (2000), Five Steps to a Dot-Com Strategy: How to Find Your footing on the Web, *Sloan Management Review*, Spring, Voll. 41, Iss. 3, 15-28.

Ward, J. and Peppard, J. (2002). *Strategic Planning for Information Systems*. New York: Wiley.

Waters, R. (1999), Introduction: Time for New Trade-offs, in FT Guide to Digital Business, ed. R. Walters, *FT Publishing*, London, Autumn, 1-29.

Watson, R.T., Piccoli, G., Brohman, M.K., and Parasuraman (2005), Customer-Managed Interactions: A New Paradigm for Firm-Customer Relationships, *MIS Quarterly Executive*, 4 (2), 319-327.

Webber, A. M., (1993) What's so New About the New Economy? *Harvard Business Review*, January - February, 24 - 42

Webster, F. E., (1992) The changing role of marketing in the corporation, *Journal of Marketing*, 56, October, 1-17

Webster, F., (1998) Interactivity and marketing paradigm shift, *Journal of Interactive Marketing*, 12(1), 54-60

Wensley, R. (1999), Product strategies, managerial comprehension, and organizational performance, *Oxford Review of Economic Policy*, Spring, Vol. 15, Iss. 1, 33-42.

Willcocks, L., (1996) *Investing in Information Systems - Evaluation and Management*, Chapman and Hall, London.

Willcocks, L., and Lester, S., (1996) The evaluation and management of information systems investments: from feasibility to routine operation. In Willcocks, L., (Ed) *Investing in Information Systems - Evaluation and Management*, Chapman and Hall, London, 15-35

Williams, J. (1999), Consumer Profiles made to Measure, in FT Guide to Digital Business, ed. R. Walters, *FT Publishing*, London, Autumn, 1-29.

Wind, J. and Mahajan, V. (2000), Digital Marketing, *European Business Forum*, No.1, Spring, 20-27.

Wu, F., Mahajan, V. & Balasubramanian, S. (2003). An Analysis of E-Business Adoption and its Impact on Business Performance. *Journal of the Academy of Marketing Science,* 31(4), 425-447.

Yoffie, D.B. (1996), Competing in the Age of Digital Convergence, *California Management Review*, 38 (4), Summer, 31-53.

Zuboff, S., (1988) *In the Age of the Smart Machine*, Heinemann Professional Publishing, Oxford

Table 2: MarkITing: A Framework for ICTs: The information and interactions dimensions

Information (Research, Analysis and Planning)	Interactions (Communications, Connections and Collaborations)
Analysis and Planning	**Communications**
Marketing planning systems	Internet
Performance tracking software	- Website design software: Photoshop
Executive support systems	-Website security
Decision support systems	-Interactive website applications
ERP (Enterprise Resource Planning)	-Ecommerce applications
Knowledge Management Systems	Intranets
Pricing software	Extranets
Project Management Software	Electronic data interchange (EDI)
Promotion Tracking software	Email
Media Spend analysis packages	Video conferencing
Logistics Systems	Call centre
Geographical Information Systems	CATI – computer-aided telephone interviewing
Customer Profitability analysis	Automatic Call Distribution
PRISM Clusters - databases	Computer telephony integration
Forecasting Software/ predictive modelling	Mobile communication devices
Marketing modelling	Instant Messaging

Information systems (SAP, PeopleSoft and i2)

Databases
Centralised customer database
-Integrated with sales

-Integrated with call centre
-Integrated with internet
-integrated with point of sale
Data consolidation and display
Data mining
Data warehousing
Data Profiling
Data Visualisation and Analysis Packages
GQL – Graphical Query Language
SQL

Research
Internet
Marketing Information System
Data Analysis Packages
Geographic Information Systems
Demographic online systems
Internet Survey – design and application
Online mailing lists
Nielsen Information database
Web Analytical Technologies
Website Performance and Activity tracking
Monitoring and Tracking Software
Searchable Databases

Customer Relationship Management
CRM Software
Customised front office/back office systems
Marketing Evaluation Software
Contact Management Software
Personalisation Technologies
Customisation Technologies

Retailing System
Electronic Point of Sale
Planogram, Spaceman Category Management
Personalisation/customisations
ETags/ Digital and Bar codes – scanning data

New Product Development

Product Development and Design software

Simulation technologies

Idea generation tool: Idea Garden -

Imaginatik's Idea Central

Statistical tools

Tracking Devices – Blue Tooth

SMS – simple messaging service
Facsimile communications
Electronic markets

Help lines
Voice Mail
Spam blocking systems
Voice activated/recognition software
Computer links with suppliers
Computer links with customers
Web Casting
Web meetings: WebEx
Digital Imaging Software

Self Service Technologies
Integrated TV and Internet - TIVO
Internet Technology
ATM,
Automated Vending machines
Hand held Scanners
Biometrics
Mobile phones
Blue Tooth Technologies
Monitoring devices
Customisation software
Personalisation software

Sales Related
Customer relationship management
Sales force automation packages
Mobile phones
Laptops
Telemarketing
Customised sales force systems
Point of sale information systems
Customised Customer Applications
Access databases
Sales Reporting Software

Supply Chain Management
Supply Chain Management Software (SCM)
Automated Production
Internet marketplace Emarketplace/Ehub
Inventory management software

Material planning and supply software

Electronic Data Interchange

QR/ECR (Efficient Customer Response software

Eprocurement systems

	Online purchasing transactions
CAD Computer Aided Design	
Others	RFID (Radio Frequency Identification Devices)
Training and Educational Software	**Interactive Products**
	Biometric
	Voice Recognition Software
	Blue tooth technologies (20 m radius)
	Virtual Reality
	GPS – geographic positioning systems
General Underlying and Platform Technologies	
Hardware: Personal Computers, Networked Computers, Main Frame, Laptops, Personal Palm Computers, CD ROM/DVD, Mobile Phones. Digital Assistants. **Office Packages:** Word, PowerPoint, Excel **Internal Communications** Groupware Systems Lotus Notes, Wide/local area networks – Wan/LAN **Broadband capability**	