The management of technological innovation in the hotel industry: A critical literature review.

Introduction

This paper takes the form of a critical review of literature on technological innovation in the hotel industry. It aims to develop fuller understanding of the nature of the managerial capabilities which underpin effective implementation and development of technological innovation in the industry context. The review undertaken has been informed by key national and international tourism and enterprise development strategy documents (The Bacon Report, 2009; The National Development Plan, 2007; Failte Ireland, 2005; Tourism Policy Review Group, 2003). Collectively, these reports show that existing CRM capability knowledge is substantially inadequate, leading to a negative impact on business performance and a shortfall in the availability of appropriately crafted solutions to meet the industry's future challenges. This study's focus is on the customer-relating capability of key stakeholders which has been identified in the literature as a key business success driver (Day, 2003). This point has been made by a number of Irish commentators especially on the increasing complexity of the management task and also on the nature of the skills required to compete in international knowledge based industries. For example, the Enterprise Strategy Report Group (2004) stated that indigenous firms in particular require external assistance in developing their CRM capabilities and expertise. However, there is little in the way of critical analysis of Irish management practices in the hotel sector.

Despite the positive association which has been made between CRM capabilities and competitive advantage (Harmsen and Jensen, 2004), research on the topic is limited in scope and the field of study is still emergent; further, Ireland's tourism industry has suffered from a relative lack of attention from applied researchers in the critical area of capability development. The lack of research interest has serious consequences for the hotel industry because building and managing relationships with customers does not occur naturally as there is a natural "gravitational pull" towards a transactional approach to customers by firms (Day, 2000). Nor do relationships inevitably sustain themselves. If enterprises consider that the customer is "…*the central unit of analysis and action*" (Kumar and Reinartz, 2006), then building and managing relationships with customers for profitability requires firms to possess a CRM capability. A low level of CRM capability will inevitably lead to a lack of competitiveness (Zeithaml and Bitner, 2000). The proposed review will close this knowledge gap by focusing attention on CRM capabilities within the hotel sector. Therefore, the purpose of this project is to undertake a critical review of the literature in the area with a view to documenting current deficiencies and practices within the hotels industry internationally and more specifically within the hotels sector in Ireland. The concept of technological innovation is broad and for the purposes of the present paper the review concentrates on communication and marketing distribution aspects of technological innovation.

The Irish hotel industry

The hotel industry is a vital component of the Irish tourism sector, and contributes significantly to the wider economy at both national and regional levels (Failte Ireland, 2012). Over fifty thousand people are employed in hotels, with many of the positions contributing to economic regeneration and the sustaining of community life in more remote parts of the country (Irish Hotels Federation, 2012). In a wider context the hotel industry is a key pillar in the tourism industry providing accommodation and value added facilities upon which other areas of the industry depend to a tourism industry contributing over five billion euro to G.D.P. (Failte Ireland, 2012). Finally, the hotel industry is indigenous with a long term stake in Irish economic regeneration, in comparison with the fleeting nature of some foreign direct investment (Department of Taoiseach, 2013).

The hotel industry faces many competitiveness challenges (Irish Hotels Federation, 2012). The financial crisis of the past five years has rendered many hotels developed during the economic boom, financially unsustainable (Ahearne, 2012). Emerging from the wider financial crisis, a credit drought has stifled possibilities for investment at many hotel firms (The Bacon Report, 2009). The decline in the wider tourism industry, a function of G.D.P. decline throughout Ireland's major markets, has led to a major drop in demand for hotels (Failte Ireland, 2012). Despite government efforts to deregulate the labour market of hotel firms, the industry continues to be challenged by labour cost competitiveness in comparison with EU competitors (Irish Hotels Federation, 2012). Finally, despite considerable progress made over the past ten years, hotel managers continue to lag other service sectors in terms of management development (Watson, 2008).

However despite the challenging nature of the hotel industry's competitive environment, there are arguments, at both policy level (Failte Ireland, 2011), and in the academic literature (Sigala, 2011; Noone *et al*. 2003) that hotels can overcome competitiveness challenges through the development of technological innovation, and specifically technological innovation enabled by customer relationship management (Vogt, 2010). Through the process of technological innovation, hotels are offered new trajectories of competitive positioning, often in harsh environmental conditions (Lo *et al*. 2010). Examples include opportunities to capture new markets through low cost promotions (Baggio *et al*. 2011); market segmentation enabling a concentration on high value customers (Piccoli *et al*. 2003); maximisation of operational resources (Patel, 2012); and the use of new technology to both drive and shape organisational restructuring (King and Burgess, 2008). A key ingredient in the decision to develop, implement and leverage technological innovation is the hotel firm's management (Zablah *et al*. 2005). The role of hotel management in the development of technological innovation is often assumed, rather than described (Lo *et al*. 2012) and equally while there is increasing awareness, both of the strategic importance of the depth of competitive advantage offered by technological innovation (Sigala, 2005) and of the areas of management impacting on technological innovation, from a managerial perspective questions remain as to how hotel managers might best interact with new technology (Luck and Lancaster, 2003). Questions also remain as to the nature of

managerial capabilities which effectively develop and interact with strategic frameworks of technological innovation in the hotel industry (Sigala, 2011).

Technology innovations- new and emerging trends

The hotel industry was one of the first industries to attempt to put into practice new technology aimed at improving business practices and leveraging relationships (Piccoli *et al*. 2003). Early attempts were characterised by a heavy focus on the anticipated benefits of the new technology with limited focus on the contextual implementation of the technology and often outright neglect of the managerial, employee and stakeholder challenges involved (Baggio *et al*. 2011). Business benefits of the new technology included cost reduction in marketing departments (Chen and Popovich, 2003), greater marketing capability resulting from value based segmentation of customers (Buhalis, 2008), integration of the technology with other functional information systems (Bull, 2003) and improved customer service emerging from greater customer knowledge and faster reaction times (Luck and Lancaster, 2003). Organisational change, often in cases where hotel firms lagged change in their business environment, was given new impetus by the decision to implement new technology, and to an extent through the often unintended but beneficial externalities realised as new technology became a driver of organisational change and restructuring (Noone *et al*. 2003). In effect, technology frequently acted as a grand narrative through which strategic change was both justified and implemented (Payne and Frow, 2005).

Today hotels continue to respond to environmental competitiveness challenges through using new technology as a form of innovation (Sigala, 2011). The use of call centres to handle hotel customer queries has, on the one hand, enabled the cutting of costs within the hotel firm, and the liberation of employees to engage with the core competences of the hotel, enabling the specialised call centre firm to concentrate on developing the customer relationship (Lin and Hwan Yann, 2007). Nonetheless, call centres have provided poor customer service and damaged the brand reputation of the hotel and through providing poor quality management information (Gronroos and Ojasalo, 2005). Moreover call centres have challenged hotels to build and develop relationship management capabilities with the providers of services, where outsourcing is used. Neglect of the development of capabilities has led to failure, not simply in terms of limited benefit from the proposed new initiative, but consequential damage to wider aspects of the hotel business, including the brand image, internal communication mechanisms and the credibility of management (Luck and Lancaster, 2003).

New technology has also enabled the gathering of customer information at multiple and novel customer contact points (Peelen *et al*. 2009). For example hotels gather information, as customers book over the internet and hotels are enabled to review their own performance through internet based reviews, such as Trip Advisor. Strategic business advantage can only be developed, however, when the process of utilising the customer information is taken a stage further, linked with information from across the business functions and crafted into a robust business strategy capable of withstanding vagaries of environmental change (Peppard, 2006). Critically, hotels are then offered the Midas like gift of potentially rich and competitively valuable information, not possessed by competitors, yet because of disengagement between the business aspects

of the organisation and technological capabilities they are often unable to translate the information into competitive advantage.

Technological innovation is argued to radically alter the nature of the hotel firm's distribution channels thereby redrawing the nature of the firm/ customer interaction but furthermore reshaping the nature of the firm's relationships with competitors (Nemec Rudez and Mihalic, 2007). In terms of business impact the development of new distribution channels enables the firm to connect with new, often younger and high value customers (MacFarland, 2012) thereby generating higher levels of profitability. Further, where the firm develops capabilities in the area of the management of the new distribution channels, often premised on the rapid identification of new customer needs and their satisfaction, it becomes possible for the development of deeper level competitive advantage (Nemec Rudez and Mihalic, 2007).

More recently hotels have been presented with both the opportunities and challenges created by the synthesis of new technologies created through the convergence of the mobile phone, internet, computer hardware and software industries (Economic and Social Research Council, 2012). For example it is estimated that by 2015 fifty five percent of hotel bookings will take place through customer smartphones (Euromonitor, 2010 cited in Callarisa *et al.* 2012). New technology platforms include virtual social networking through Twitter, Facebook and systems where user generated reviews of hotels challenge hotels to improve their communication processes and to develop and maintain a brand image through new channels, a process requiring interaction with customer review sites, individual customer feedback and the development of strategic marketing capabilities which capture and influence new types of customer in an emerging virtual space (Mitic and Kapoulas, 2012).

Hjalager (2010) highlights how the growing importance of social media offers opportunity for tourism firm innovation. Emerging from the newer forms of social media are opportunities for hotels to gain greater knowledge and develop relationships with growing and high value market segments of customers who are adept at using social media and often possess high levels of disposable income. Moreover, such market segments display considerably different behaviours to traditional customers. The nature of the different behaviour includes the emergence of customer retention challenges; a high level of sensitivity to price combined with demands for more ethical business practices (MacFarland, 2012). Shaw *et al.* (2011), developing the concept of service dominant logic, argue that social media, offer tourism firms opportunities to engage in new ways with customers, enabling the co-production and co-creation of business knowledge, rather than relying on the traditional management approach where businesses are sharply delineated from customers. Critically, challenges remain for hotels to alter their existing business capabilities in the development of appropriate offerings through the social media vehicles and further to begin the process of strategic dialogue both as to the value and potential challenges in facilitating customer interaction through new distribution challenges (Chan and Guillet, 2011).

New technology has also deepened the relationship between hotels and their customers as data mining of customer databases (Siguaw *et al.* 2009) offers hotels the opportunity to develop in depth customer profiles and match service offerings based on the profiles.

In some cases the development of customisation of service offerings (Payne and Frow, 2005) has almost been achieved with customers offered unique offerings which build deep and long term profitable exchange relationships (McCay, 2010). Strategically, customisation processes have linked been linked effectively to hotel firms marketing capabilities through the development of more sophisticated forms of customer loyalty scheme (Daghfous and Barkhi, 2009) leading to the lock in of loyal and valuable customers for long periods of time.

Changing dynamics and competitive trends within the hotel industry

Despite high levels of technological innovation in hotels over the past twenty years, there remain deep challenges both in terms of continuing to adopt new technology (Sigala, 2012) and in developing appropriate managerial models through which to visualise and to shape the technology towards the generation of sustainable competitive advantage (Daghfous and Barkhi, 2009). Strategic marketing management arguments that customer relationship management (CRM) systems would develop wide and deeper source of customer information have proven true (Sigala, 2011), yet converging with an apparent advantage there is a major managerial challenge. Specifically CRM systems suffered from poor managerial awareness of their potential resulting in the generation of volumes of potentially useful business knowledge which remained untapped by industry practitioners (McKay, 2010) and may even have clogged marketing systems, as managers and employees struggled with finding business use for the data (Luck and Lancaster, 2003). Simultaneously there are challenges from an employee perspective as employees fail to cope with workplace change, often being reduced to simply surviving as opposed to contributing in any new way to business processes (Sigala, 2005).

Despite significant progress over the past ten years, the managerial and organisational challenges faced by hotels remain steep, partially because of the continuing development of new technology, but also because many hotels remain behind the early adopters of new technology, thereby facing challenges which more developed firms have overcome (Cheng *et al*. 2012). From a practitioner perspective Walter Patel (2012), the founder of one of the hotel industry's longest established suppliers of innovative technology argues that despite tangible evidence supporting the business benefits of information technology in terms of attracting new customers, cutting marketing costs, leveraging high value customers and providing strategically vital competitive information, hotel firms remained slow and often unwilling, to develop and keep abreast of new technological developments. Simultaneously the competitive environment of hotel firms has become more uncertain and subject to radical change, as more sophisticated customers become more price conscious and less brand loyal (Sigala, 2005). The result can be that hotel firms who invested heavily in new technology, yet failed to develop the necessary capabilities to continually develop the technology, are locked in a strategic trap, where costly technology has consumed resources, yet in comparison with competitors who continually develop the technology, the resources appear as an expensive sunk cost anchoring strategic moves to an environment of the past.

Payne and Frow (2005) posit one major reason underlying the avoidance of taking proactive action with regard to technological change may be the lack of managerial capability to develop technologies such as CRM. However from a business perspective such an approach may appear illogical, yet taken from the perspective of managers socialised in a world of differing business models, the approach may be rational. The managers seek to avoid the extreme shock of change, or even failure, and attempt to deny the potential benefits of new technology, instead surviving over the short term adapting a 'fire fighting' approach (Ghobadian and O'Regan, 2004: 79). Orfila-Sintes *et al.* (2005) argue that hotel industry technology innovation is essentially supplier driven as hotels adopt technologies presented and often skilfully marketed by technology suppliers but also perceive pressure from the competitive actions of industry leaders to mimic their strategic actions. The supplier driven innovation, while offering the benefits of technology to the hotel industry, highlights particular challenges in presenting individual firms with often complex technology requiring allowance to be made for a time period during which the technology becomes organisationally embedded, management and employee awareness of the benefits of the technology and the integration of the technology with existing legacy systems. Furthermore, determinist accounts of supplier driven technology (Storey, 1987) posit that firms can become victims of technologically shaped environments in which the managerial role is reduced to coping with operational challenges to the detriment of the strategic development of the firm. In effect, technology becomes the driver of change to organisational structures, processes and stakeholder relationships with managerial activity subsumed to day to day 'fire fighting'.

Luck and Lancaster (2003) argue that hotel firms lag other industries in the development of online capability development, positing that despite apparent progress in terms of developing online presence through web enabled customer interfaces, the progress both lags that of other industries in terms of the numbers of firms developing the interfaces but, and from a business perspective perhaps more significantly, exhibits reluctance to utilise the online presence as other than a tool to improve transaction processing. While they argue the importance of developing new strategies, including embracement of online channels as a new and radical opportunity to develop the hotel firm's marketing capability, there remains scope to question how new strategies evolve, and perhaps to uncover the motivations and managerial capabilities underpinning firms which develop the new strategies.

Even where information technology is implemented through a proactive management strategy there remain challenges in the development of effective relationships with the suppliers of the technology, both at the implementation stage and during the life cycle of the technology (Victorina *et al.* 2005). Siguaw *et al.* (2009) argue that through the process of developing a set of strategic objectives where there is considerable interaction between the management of the technology supplier and the hotel firm, relationships develop enabling both the best use of the hotel's resources. Moreover the liberating dialogue between the partners provides the development of new ideas but also facilitates the building of a longer term strategic relationship. However, though their research provides insight into both the potential benefits of the strategic partnership and the organisational mechanism through which it might be achieved there is scope for research into the nature of the managerial capability, perhaps manifest as human

capability, which best enables the development of the strategic partnership (Coltman, 2007).

Within the hotel industry different modes of ownership and management influence the type of technology adopted and may impact on the nature of managerial capability required for development of technology. Ham *et al.* (2005), in a study of Korean upscale hotels argue that the benefits of new technology may appear more strongly in upscale hotels as they are more likely to adopt a long term perspective to the payback from the technology investment and also provide adequate training to employees who support the development of the technology. Specifically, employees benefit through increasing levels of self-efficacy where targeted training comprises part of technology implementation in hotels (Huh *et al.* 2009). Winata and Mia (2005) argue that in hotel contexts where a formal financial planning framework provides an overarching strategic framework technology implementation benefits from being subject to continuous appraisal from a business perspective. The strategic positioning of full service hotel firms enables technology to unlock new sources of competitive advantage but often the processes underpinning enablement are dependent on sophisticated organisational routines embedded in the firm's strategy positing that technology alone is a limited strategic resource (Chathoth, 2007). Conversely, in a study of U.K. mid-market hotels Imrie and Fyall (2001) argue that limited financial resources combine with lower levels of managerial capability to stymie the potential of technological innovation. Managers are also argued to possess limited awareness of the potential of technological innovation in mid-hotels in India (Dabas and Manaktola, 2007). Finally, Murphy and Kielgast (2008) provide evidence of the missed business opportunities arising from SME hotel managers who lack the technological capability to engage with and develop new technology.
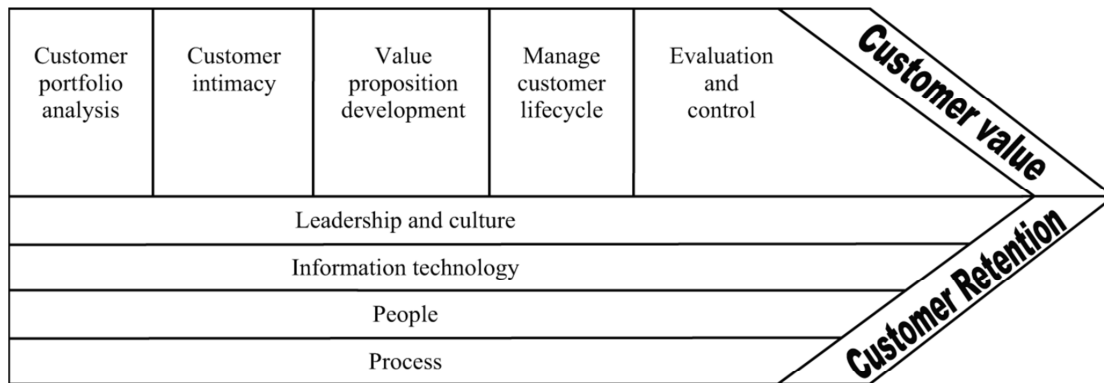
More recently the advent of social media and the integration of social media based technology into the business models of hotels have created new challenges. Chan and Guillet (2011) argue the need for a more developed strategic marketing capability in organisations contemplating the use of social media for business. They argue that conventional marketing capabilities, premised on long product life cycles, slowly responding pricing and traditional promotional mechanisms, require radical change when faced with an organisational environment where social media form a key platform of environmental engagement. While they posit the need for development of greater organisational capability in marketing, for example the crafting of new promotional strategies which impact on both the effectiveness of the social media marketing, but also through a feedback loop on the existing corporate marketing strategies, they address the challenge of the strategic management of marketing new technology only by way of recommendation and leave open the question of the nature of such management and how it might emerge in an organisational context. In a critical study of the management of social media in the hotel industry Dwivedi *et al.* (2007) caution that sources of hotel firms competitive advantage rooted in brand image, requiring investment over long time periods can be damaged in relatively short time periods through poor development of social media presence, as strategic marketing capabilities of organisations developed from more traditional business models are found to be inadequate.

Theoretical framework

In the strategic management literature the resource based view argues that organisations comprise interconnected resources which are shaped and developed by managers with the aim of improving the organisation's competitive advantage (Barney, 1991). Managers play a crucial role, through their cognitive and perceptual processes, in the selection and improvement of resources (Chen and Popovich, 2003). Further, over time and through the process of managerial capability development, complex configurations of resources in the form of capabilities (Collis and Montgomery, 1994) embedded in the firm's organisational structure and culture emerge as difficult to imitate sources of competitive advantage due to information asymmetries between the firm and its competitors and through time compression challenges (Dierickxx and Cool, 1989). Information technology is argued to form resource capable of development by management towards the generation of sustainable competitive advantage (Drohan *et al.* 2009). Managers, through the process of selecting and allocating managerial attention to the development of technological resources effectively take a resource based view in focusing internally on developing both the resources, but also their relationship with other aspects of organisation where technology is inextricably intertwined with customer relationships (Zablah *et al.* 2004).

Frameworks for strategic implementation of new technology

One mechanism through which the managerial challenges inherent in the development of technological innovation in firms may be understood is through taking a strategic management perspective (King and Burgess, 2008). Through the process of strategic management managers are both enabled and challenged to think more widely, deeply about the optimum use of technological resources and how they may be best integrated with a firm's resources and capability structures towards the development of sustainable competitive advantage (Fahy and Smithee, 1999). Empirically, Daghfous and Barkhi (2009) argue that higher profitability and service excellence are features of hotels where CRM is implemented and developed by managers who take a strategically proactive approach. Managers are then enabled to evaluate the possible business benefits of the CRM systems and to use the systems to leverage related software suites, for example supply chain management and total quality management software. Within the existing literature a number of frameworks to enable the strategic management of technological innovation have developed, and the following sections provide both critical review but also some argument for their adoption specifically within the hotel industry.

Customer portfolio analysis	Customer intimacy	Value proposition development	Manage customer lifecycle	Evaluation and control	*Customer value*
Leadership and culture					
Information technology					
People					
Process					*Customer Retention*

Figure1: Value chain of adopted by Lo *et al*. (2010)

Lo *et al.* (2010) building on the need for a strategic business perspective for the implementation of CRM propose a modified framework based on Buttle (2004). The model advances on aspects of technology development which are premised narrowly on providing technology as an all encompassing solution to the hotel firm's business challenges and through clearly identifying the importance of customer focus, and more specifically a focus on valuable customers and the development of relationships, identifies business drivers which can act as enablers of a fruitful dialogue between technological challenges and the challenges faced by business strategists. Moreover, the model reflects the potentially static nature of information as a resource, unless it is strategically shaped and exploited as a resource within organisational capability structures, thereby concurring with the arguments that possession of state of the art technology is other than an enabler to value based competitive advantage (Patel; Orfila-Sintes *et al*. 2005). Opportunities and challenges presented to hotel firms by social media, while capable of integration into the model, are perhaps only presented in an overly simplistic manner and while there is acceptance of multiple aspects of customer / firm interaction, most notably in the provision for customer intimacy, an essential part of the social media business interaction (Callarisa *et al.* 2012), nevertheless the very terminology inherent in customer life cycle and in evaluation and control, suggest a paradigm of business organisation pre dating the world of social media.
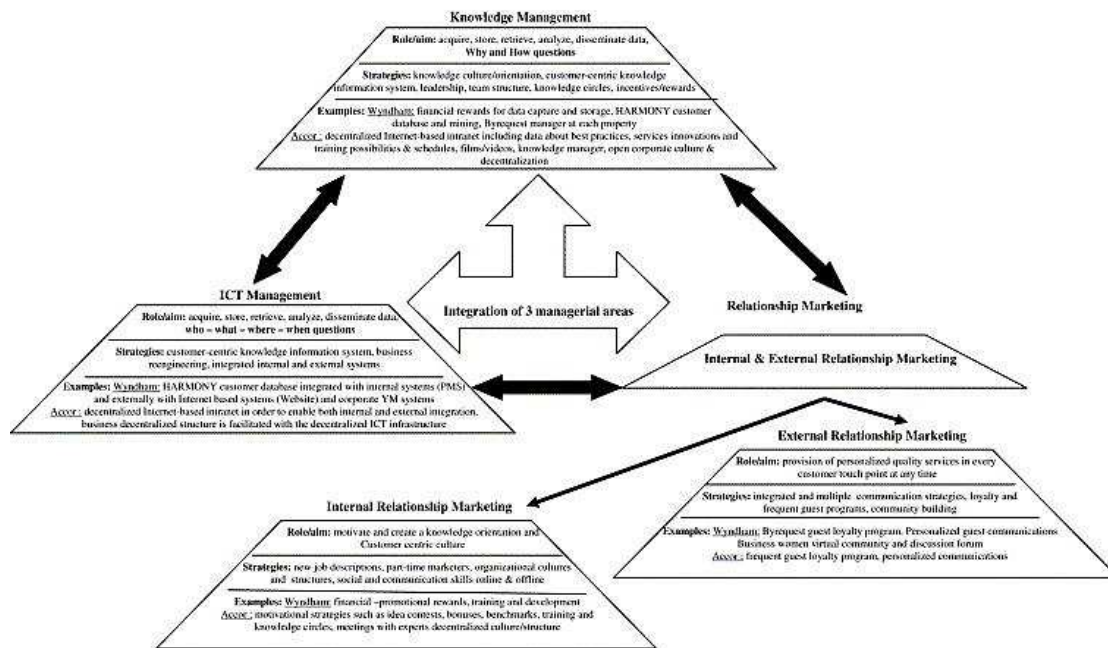
Figure 2: Integrated CRM Model: Sigala (2005)

Sigala (2005) develops a model where greater focus is given to the need for management to develop capability in understanding the technology before it becomes part of any contemplated strategy. While, in comparison to Lo *et al.* (2010), there is an apparent neglect of the strategic importance of the customer and the associated value offerings of the firm, nevertheless the importance of both is implicit within the three managerial areas and it is assumed managerial strategy, as a dynamic yet critical synthesis of the three pillars, ICT management, relationship management and knowledge management builds on the customer and value assumptions implicit in each pillar. Essentially, the manager centric nature of the model enables the use of the model in investigating how innovative technology emerges and is subject to strategic management, as opposed to emerging entirely in a vacuum devoid of human influence.

Zablah *et al*. (2004) argue the importance of taking an organisational approach, as opposed to approaches based on technological capabilities, in order to uncover management best practice in CRM. They develop a model of CRM in the organisation with knowledge management, premised on the excellence of both idea generation and idea dissemination and interaction management, premised on the development of capabilities in the management of the relationship between the hotel firm and the supplier of the software. Critically, the model may neglect the direct knowledge of technology, raising questions as to whether managers rely on developing relationships with information technology providers (Siguaw *et al.* 2009) as opposed to developing their own critically informed perspectives on the use of information technology themselves. However, as with Sigala (2005) considerable emphasis is lain on the development of knowledge management capabilities within the firm, thus overcoming some of the business challenges identified in leveraging employee capability and developing the organisational change capabilities necessary for the effective management of ongoing technological innovation in the hotel sector. Further, the

model enables the establishment of a link between knowledge management and relationship management through an approach where the development of intelligence, in the organisational context, is critical and opens the possibility for an integrative approach where the managerial strategizing may form the trigger in enabling and developing intelligence. The model developed is entirely premised on critical review of literature, therefore suggesting the importance of the development of empirical research, particularly that aiming to develop measures (Zablah *et al.* 2004).

Coltman (2007) argues that successful CRM demands the simultaneous development of three distinctive sets of organisational capabilities in the shape of those based on technology, those based on business management and human factors and thereby argues the need for managers to grapple directly with questions of how their own knowledge of technology is acquired and developed, overcoming limitation of the other models. However as the unit of analysis is at organisational level there are challenges in adopting a managerial approach to the model. Methodologically the study advances on other CRM studies (e.g. Sigala, 2005), in using in depth interviews with top executives, as key informants, in order to gain a holistic picture of the strategic management, as opposed to more functional challenges, inherent in developing CRM. It is suggested that the primary contribution of management at strategic level is to leverage the three capability sets towards the development of a long term competitiveness emerging from the leveraging of CRM.

Conclusions and recommendations for future research

The academic literature has long been aware of the potential inherent in technological innovation both to leverage existing organisational resources (Burgess and King, 2008) but also to create and develop new resource configurations, perhaps opening new evolutionary pathways of strategic competitive advantage (Baggio *et al.* 2011). Similarly practitioner literature has been aware of the potential of technological innovation and, sometimes been ahead of the academic literature in terms of melding the technology with other organisational factors and liberating competitive advantage (Patel, 2012). However, recent developments in the technology environment broadly labelled as the emergence of industry applications of social media (Callarisa *et al.* 2011) have begun to challenge existing frameworks for the management of technological innovation. Specifically there is a questioning the mechanisms through which hotels interact with their customers and the implications of both the mechanisms used and the use of information gathered for the development of the hotel's brand image (Chan and Guillet, 2011). Future research, perhaps benefiting from cross disciplinary co-operation between strategic marketing management and information technology management, might investigate in greater depth the posited changing nature of the interaction between hotels and their customers. Methodologically research will face both opportunities, in terms of breaking new ground but also challenges in using less conventional, but developing, research methods to investigate online behaviour through blogs and online community spaces (Hookway, 2008).

A common theme in the literature on technological innovation is the lack of engagement between managers and emerging technology. The literature to date has taken an

approach to overcoming this apparent shortcoming by developing models of managerial behaviour (King and Burgess, 2008; Zablah *et al.* 2005), and more specifically frameworks through which strategic action can implement technological action (Coltman, 2007; Sigala, 2005). However, taking a critical position, there appears to be limited research into why managers find strategic engagement with technology challenging and, subsumed within such research, the development of pathways through which managers might improve their engagement. Therefore future research might benefit from considering the reasons managers find technological innovation challenging. Specifically, Sigala (2005) recommends the development of research using in depth interviews and a qualitative approach as a means to developing a holistic approach to what would be exploratory research.

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