A Study Into Factors Contributing To Diffusion Of A Perceived Disruptive Innovation In Tourism Smes

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A STUDY INTO FACTORS CONTRIBUTING TO DIFFUSION OF A PERCEIVED DISRUPTIVE INNOVATION IN TOURISM SMES

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Abstract

Whilst many studies have looked at the issue of diffusion of technology in a myriad of settings, few have focused on the impact of disruptive innovation in the field of information systems (IS) and even fewer on the impact of disruptive innovation on technology diffusion in the context of small-to-medium (SME) sized businesses such as holiday parks. Those that have investigated this topic have commonly examined it through the perspective of the interaction between the vendor and businesses concerned, without considering any interactive role by the end-user customers. The objective of this study is to investigate the impact of disruptive innovation on technology diffusion in SMEs and the factors that accounted for the belated diffusion of on-line reservation systems with payment gateways in this context. Findings show that beyond the interplay between vendors and businesses in the diffusion of IS, there is a third important social group to consider, namely the end-user, or in the context of this study, the guest. Consideration of such third party social factors as a component of organizational decision making may enrich current theoretical models about diffusion of technology.

Keywords: Diffusion, Disruptive Innovation, Customer End-user, Social Element.
1 INTRODUCTION

On-line reservation systems with payment gateways (ORSPGs) have long been used by large accommodation businesses, particularly hotel chains, who regard them and third party systems like wotif.com and lastminute.com as mainstream technology (Sigala et al. 2001; Buhalis 2003; Johnson 2005). But what are mainstream systems for one sector do not necessarily translate into mainstream systems for another sector. For example, holiday parks, a closely related accommodation sector, primarily focused (until at least 2010) upon taking reservations via phone and email. For them, ORSPGs were largely perceived as disruptive to their operational model of engaging directly with customers as a central part of the booking process. Herein customer interactions, right from the first point of contact/inquiry, were seen as critical to success. Consequently this affected adoption of impersonal technologies such as ORSPGs. This paper reports on a longitudinal study, conducted over 3 years (from 2008/2009), into the adoption and diffusion of information technology (IT), particularly ORSPGs, in small-to-medium (SME) tourism holiday parks. Results show considerable growth during this time in the adoption and use of these systems in daily practice, which given the short timeframe, raises questions about the motivating factors. Findings suggest that answers lay in the business-to-customer context, which ironically had been where the perceived barrier lay in the past, rather than in the software vendor-to-business context, as is so often the case with adoption of disruptive innovations (Constantiou et al. 2009; Yu & Hang 2010). Insight into the role of third parties in the adoption of disruptive innovations is a new contribution that is particularly pertinent given the growing pervasiveness of social media like Twitter and Facebook.

Utilizing internet technology, ORSPGs enable businesses to list their available accommodation (including price and facilities) on websites for potential customers to view, select from and pay (via a secure web link) a deposit for the use of, resulting in an instantaneously confirmed booking. In the hotel sector, use of ORSPGs has become a sustaining technology in part due to their customers’ ready understanding about what constitutes a hotel room, the business nature of many bookings, their location in centers with good internet access, and their IT sophistication as part of their corporate ownership (Sigala et al. 2001; Buhalis 2003; Johnson 2005). In this regard there are significant differences between hotels and the tourism holiday park SMEs reported on in this longitudinal study. Not only did the SMEs studied offer a greater range of accommodation types, whose configuration often requires clarification with customers, but their target market also differs, being primarily family rather than business. Furthermore, they saw their competitive advantage lay in fostering a close relationship with customers, and internet access for these businesses was less certain (Wilkin 2010). Consequently the adoption and diffusion of ORSPGs was slow. In a sense they were perceived as a disruptive innovation. Given this and the importance of the tourism sector to the gross domestic product (GDP) of many countries, there is relevance in investigating the factors that have contributed to this perception and the factors that have contributed to their increasing diffusion.

An initial study, conducted in 2008/2009, into technology acceptance in tourism holiday park SMEs located in one state of Australia, revealed widespread acceptance of the more basic forms of IT relevant to the sector (i.e., EFTPOS, businesses own website, email, computerized accounting and fax). However, what was striking was the less than 50% acceptance rate amongst these businesses of on-line reservation systems, with even lower results when these on-line reservation systems included a payment gateway (Wilkin 2010). Three years later the study was extended with website analysis and a second supporting survey, with results indicating significantly greater uptake (47.6%). Given findings from the first survey indicated that low acceptance of this IT in part, at least, related to a perception that the technology was disruptive due to cost, customer relationships and reduced operator control over reservations, such a change in acceptance warranted investigation. The purpose, therefore, of this longitudinal study was to explore the diffusion of ORSPGs in tourism holiday park SMEs and thereby contribute to knowledge about factors that affect diffusion of such a technological disruptive innovation. In addressing this, the research question investigated was:

*In an SME context, what factors facilitate the diffusion of an information system that has been perceived as disruptive?*
In investigating this, the paper is structured as follows. The paper begins with a literature review of SMEs’ use of technology, and related discussion concerning the diffusion of innovative technology and disruptive innovations. Section 3 presents the research method and context. After reporting on findings from the longitudinal study (see Section 4), factors are discussed that accounted for the diffusion of ORSPGs (Section 5). Finally, Section 6 outlines the conclusions, limitations and future research directions.

2 TECHNOLOGY USE IN SMES, DIFFUSION AND DISRUPTIVE INNOVATIONS

Investigation of the factors that account for the diffusion of ORSPGs in tourism holiday park SMEs commences with a brief review of technology use in SMEs. Then, in understanding the changed responses between the 2008/2009 survey and the findings three years later regarding how the innovative technology (ORSPGs) was initially resisted, but later adopted, two widely used theories in the information systems (IS) domain are explored in the context of this research. These are the Diffusion of Innovation Theory, which was initially expounded by Rogers (1995) and the Theory of Disruptive Innovation (Christensen 1997).

2.1 Technology Use in SMEs

As with larger businesses, SMEs rely upon technology to ensure accuracy and accountability in managing business processes, facilitating customer relationships, maintaining financial records and monitoring staff and business performance. Yet they are different from their larger counterparts. For example, the locus of control for key business decision making is usually centered on the owner(s) (Harindranath et al. 2008; Wilkin 2010) and decision making relates more to operational needs than strategic objectives (Levy et al. 2001; Harindranath et al. 2008). Moreover, evidence suggests that e-commerce has spread less widely in SMEs (Poole et al. 2006; Wilkin 2010), with Australian SMEs being much less likely (29.2% - 51%) than larger businesses (73%) to have their own website (Australian Bureau of Statistics 2011). Similar results were reported in the UK (Stansfield & Grant 2003).

Significantly, in SMEs, there is more interactivity in management roles, with owner/managers more likely to use technology at operational as well as reporting/strategic levels (Levy et al. 2005; Rangone 1999). This flexibility/interactivity enables quicker responses to operational issues and is reflected in closer work-place interactions (DeSouza & Awazu 2006). With respect to success in organizational change, past research has found that it is related to: SMEs’ knowledge and involvement (DeLone 1988); building on internal rather than external IT expertise (Stansfield & Grant 2003); end-user levels of computer literacy (Cakar & Erturk 2010); and managerial enthusiasm (Cragg & King 1993; Harindranath et al. 2008). These characteristics make tourism holiday park SMEs a rich environment in which to explore factors related to diffusion of innovative technology such as ORSPGs.

2.2 The Diffusion of Innovation Theory

Rogers’ (1995, 2003) work primarily focuses on the diffusion of innovation among individuals, although there is acknowledgement of an organizational context. This study draws these two underlying contexts together because such distinctions are less significant in an SME context where the locus of decision making is centralized upon the owner who is often very active in the business. Accordingly use of the hybrid definition, namely that diffusion of innovation concerns “the adoption and implementation of new ideas, processes, products and services ... within and across organizations”, is appropriate (Lundblad 2003 p.50). Herein adoption/diffusion is determined in terms of technical compatibility, technical complexity (ease of use) and relative advantage (perceived need) (Agarawal & Prasad 1998). Conceptually the Diffusion of Innovation Theory relates to the Technology-Organisation-Environment (TOE) framework (Tornatzky & Fleischer 1990). With its organizational focus this TOE framework concerns technology adoption being influenced by three contexts: technological, organizational and external environment. The technological context relates to benefits perceived by the potential adopter (Tornatzky & Fleischer 1990); the organizational context relates to the role of top management and finances (Kurnai 2008); and the external environment
context relates to competitive pressures and the business environment (Iacovou et al. 1995). Given this study concentrates on SMEs with their owner-centric organizational focus in IT decision making, Rogers’ Theory of Diffusion was used, although analysis also drew on some of the organizational considerations related to TOE.

Rogers (2003) four main elements of diffusion, namely innovation, communication, time and social system, are described in Table 1 (see below).

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td>The characteristics, with demonstrated links to innovation, are relative advantage, compatibility, complexity, trialability and observability. It is generally regarded that all of these except complexity have a positive influence on diffusion (Lundblad 2003).</td>
</tr>
<tr>
<td>Communication</td>
<td>The issue here is how the decision maker views the person who delivers communication about the innovation, not the technical details of the product (Rogers 2003).</td>
</tr>
<tr>
<td>Time</td>
<td>This element has three components: the decision process, adopter categories, and rate of adoption. The adopter process is regarded as linear i.e., from knowledge to decision, implementation and confirmation. Adopter categories relate to the degree of inclination to adopt new ideas, the rate of adoption and speed of adoption (Rogers 2003).</td>
</tr>
<tr>
<td>Social System</td>
<td>This concerns how the stakeholders are linked, particularly who the change agents are and who the opinion leaders are (Lundblad 2003).</td>
</tr>
</tbody>
</table>

Table 1. The Four Elements Related to Diffusion of Technology

In an organizational context, when considering adoption and diffusion of technology, two concepts are significant: the radicalness of the innovation and its disruptiveness. Radicalness is generally regarded as the extent to which an innovation involves new technology that differs from what is existing (Dewar & Dutton 1986): disruptiveness of innovations refers to the extent that a customer segment (not mainstream) values the innovation such that it disrupts mainstream markets. In terms of innovation, radicalness relates to a technology dimension: disruptiveness to a market dimension (Govindarajan & Kopalle 2006).

Whilst many of the elements presented above were useful in describing results from the initial (2008/2009) survey (see Wilkin 2010), in seeking an explanation behind the initial lack of uptake (in the first survey) and changing attitudes to ORSPGs (witnessed in the second part of the study), another theory appeared to offer relevant insights, namely the Theory of Disruptive Innovation.

2.3 The Theory of Disruptive Innovation

In defining the concept of disruptiveness, Christensen and London (2003, p.1) described how an innovation may be “disrupting to one firm ... [and] sustaining to another. So the internet was sustaining technology to Dell Computer, which sold personal computers by telephone. But it was a disruptive technology to Compaq Computer (who sold mainly through stores)”. Concerning adoption of disruptive innovations, Christensen et al. (2004) depicted three consumer groups (see Table 2 – Non-consumers, Undershot consumers and Over-shot consumers) who are linked to differing strategies related to the adoption of disruptive innovations. Moreover there are those disruptive technologies which provide different values from mainstream technologies and are initially perceived by consumers (businesses) as having inferior performance in aspects that are most significant to the consumer business (Yu & Hang 2010). Market disruption occurs when, despite perceptions of poorer performance, the new product displaces the mainstream product. Low-end disruptions occur where the displacement is in the least profitable, most over-serviced market segments: new-market disruptions occur when the disruptive technology creates a new value network where the issue is lack of consumption not the existing market place. Low-end disruptive innovation offers services of lower quality, but with attractively lower prices. In time, with market growth, there is incentive for suppliers to improve performance. High-end disruptive innovation occurs when the technology adopted is more radical (rather than less radical as with low-end adoption). This concept was significant and although price was an issue, it was not the primary cause of the changes observed in this study.

In the dynamics of disruptive innovation, the new technology, which is perceived as underperforming in comparison to the old, displaces incumbent technology; mainstream consumers move to adopt the
invading, disruptive technology despite perceived weakness on key performance attributes; and some businesses fail to adopt the disruptive technology with sufficient timeliness (Adner 2002). Drawing on the work of Constantiou et al. (2009) who studied engagement with disruptive technology, three distinct groups of consumers appeared to be relevant in this study (see Table 2 below).

<table>
<thead>
<tr>
<th>Consumer Groups</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-consumers</td>
<td>Reached by new, high-end disruptive innovations</td>
</tr>
<tr>
<td>Undershot consumers</td>
<td>Targeted in the launch of new high-end disruptive innovations</td>
</tr>
<tr>
<td>Over-shot consumers</td>
<td>Reached by low-end disruptive innovations</td>
</tr>
</tbody>
</table>

Table 2. Relevant Consumer Groups in Relation to Disruptive Innovation Strategies (drawn from Constantiou et al. 2009).

Whilst disruptive innovations may offer new features, performance and price dimensions that may appeal to an early-adopter or a non-consumer, equally they may be unattractive to mainstream (under and over shot) consumers because the innovation does not deliver on what is regarded as important to performance and/or at an acceptable price (i.e., too high). However, circumstances changes, which may change mainstream responses.

In addition to these value propositions identified by Christensen et al. (2004), research has identified another motivation being the lack of improved performance from existing, sustaining technology (Adner 2002). Similarly, beyond the disruptive vs. sustaining concept introduced by Bower and Christensen (1995), other researchers have contributed to clarifying what disruptive innovation actually is. Herein it has been established that such an innovation should be inferior to attributes valued by mainstream customers, be conducive to attracting new market segments, and/or be cheaper and offer wide market penetration (Govindarajan & Kopalle 2006). Although less definitive, other differences that have been promoted are that disruptive innovation is relative (i.e., disruptive for some, sustaining for others); that it is not necessarily the cause of the demise of existing business due to new entrants; and it is not, per se, destructive as there are opportunities for competitors to adopt the innovation (Yu & Hang 2010). However to date, beyond the linear vendor-to-consumer (organization) context, there appears to be a lack of research that has related the adoption of disruptive technologies to social and commercial pressure from third parties i.e., a business’ customers. Herein, perceptions of comfortably sustaining technology may be rapidly superseded by acknowledgement that the customers (a third party) are less and less willing to accept such organizational attitudes. Under such threat to market share, the imperatives for business performance may well rapidly change.

In summary this study offers a fresh perspective on use of the Theory of Disruptive Innovation. Firstly to-date, with the exception of some studies that have looked at the business segments in high-end markets (Lyytinen & Rose 2003), this theory has only been used by a few researchers in the field of IS (Constantiou et al. 2009). Secondly the approach taken in these studies has been to examine the issue through the vendor of these products as they interacted with the various businesses (Yu & Hang 2010), rather than including final customers or users of the product. Before reporting on the findings from the current study, the issue of research method and context is discussed.

3 RESEARCH METHOD AND CONTEXT

3.1 Research Method

Given the exploratory nature of this research, the problem was investigated in a common business sector, across a range of sizes of business. Commonality of sector provided consensus regarding the purpose and use of technology, while variation in business size provided scope to appreciate differences. Further the choice to focus on one tourism sector in one Australian state was driven by the author’s background. In exploring understanding about the factors that accounted for the diffusion of technology related to ORSPGs in tourism holiday park SMEs, survey research was used. The method enabled acquisition of a current view of practice (Galliers 1992) across a range of businesses and linked with this information about the respondent’s attitudes, opinions and behaviors (Neumann...
It also facilitated the discovery of common relationships across the surveyed population (Sonquist & Dunkelberg 1997; Gable 1994).

The first survey, conducted in 2008/2009, was anonymous. Following distribution (via email) of a pre-notification letter to all potential respondents, the questionnaire was mailed out with a reply paid envelope to enhance response rates. In total 402 surveys were sent to 368 tourism holiday park SMEs, with two copies of the survey sent to 34 of the largest operators. With respect to survey items, aspects of standard instruments were used as much as possible. For example, questions probing participants to evaluate their business’ performance in applying technology to support business strategy relative to other businesses’ were drawn from Armstrong and Sambamurthy (1999); attitude toward change from Larsen (1993); understanding about system restrictiveness from Silver (1988) and DeSantics and Poole (1994); and computer playfulness from Agarwal and Prasad (1998).

The second survey, conducted 3 years later, was prompted by anecdotal evidence from within this SME context. Its purpose was to validate related analysis of material available in the public domain (i.e., on websites) regarding use of ORSPGs by the 368 businesses initially contacted (anonymity meant there was no way to identify who had responded to the first survey). For each business, the presence of an ORSPG was determined using the internet, which was possible as use of an ORSPG had to be in the public domain for customers to use – after all, that is the rationale for its existence!

Following publication of the material from the first survey (Wilkin 2010), and findings regarding increased use of ORSPGs, all who were sent a copy of the first questionnaire were emailed a summary of the findings from survey one. They were also invited to participate in a second short, five-item, follow-up questionnaire that was administered approximately one week later. This second questionnaire probed participants about the uptake of ORSPGs, as this was the aspect of their technology adoption where diffusion was weakest. It also contributed knowledge to findings from analysis of the websites.

Whilst the number of responses to the second survey was small (32 out of 368), 65.7% indicated use of an online booking system and 50% indicated use of an ORSPG. This was a significant change from the 2008/2009 survey, but supported results from analysis of information available in the public domain regarding these businesses. Again, whilst anonymity meant there was no way of determining who had replied, like the first survey, respondents contributed significant commentary that enhanced understanding of results.

Following each survey, results were further investigated through interviews: after the first survey, two stakeholders were interviewed and after the second survey one stakeholder was interviewed. Significantly one stakeholder who participated in the first survey was adamantly opposed to the concept of an ORSPG, while the other was more receptive. Although it was not possible to interview one of the stakeholders at the conclusion of the second survey, the other stakeholder possessed considerable practical (operational level knowledge) and strategic industry knowledge. The interviews provided a valuable opportunity to uncover further richness (Cavana et al. 2001). Coupled with this, informal personal observation, social engagement and the significant number of comments in the survey responses assisted with appreciation of issues related to the adoption and diffusion of technology.

3.2 Research Context: Tourism Holiday Park SMEs

Several reasons underpinned the choice to study an SME context, including aforementioned familiarity with the sector. However, the principal motivation related to the importance of SMEs to national economies in terms of economic contribution and employment, and their previously reported lag regarding IT/internet uptake (Australian Bureau of Statistics 2011). For example, in Australia there are 130,000 SMEs, which are mainly privately held (Australian Taxation Office 2008); in China there are 42 million SMEs, which represent 99.7% of enterprises (Liu 2007); while in Canada they provide 64% of private sector employment (Industry Canada 2006).

With respect to the definition of what constitutes an SME, although this varies from country to country, there is common agreement about the identifying factors associated with these businesses
including: number of employees, annual sales, and fixed assets. Given that this research was conducted in one state of Australia, it seemed appropriate to review what the Australian Bureau of Statistics (the relevant government agency) regards as an SME. The bureau defines a small enterprise as one that employs less than 20 people, while a medium enterprise employs between 21 and 200. The annual turnover of these businesses averages between $2 and $250 million; they pay approximately 15% of the total tax collected, with a further 12% of total tax contributed through amounts withheld in payments to employees; and in total they employ more than 26% of people (Australian Taxation Office 2008). As already mentioned, as well as obvious differences between SMEs and larger businesses, earlier studies have shown that SMEs tend to adopt a more operational than strategic view of business, leading to them being more reactive to immediate demands than longer term goals (Levy et al. 2001; Harindranath et al. 2008).

Contextually this study investigated SME tourist holiday parks most of which are individually owned and operated. In 2007-08 tourism contributed $40.64 billion (3.6% of Australian Gross Domestic Product); employed 497,800 people (4.7% of total employed); and was responsible for $88.7 billion in consumption (Tourism Australia 2010). Table 3 (see below) reports on findings from the first survey concerning the use of technology by the surveyed SMEs that is relevant to the holiday park sector.

<table>
<thead>
<tr>
<th>Technology</th>
<th>% Uptake</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFTPOS</td>
<td>91.8</td>
</tr>
<tr>
<td>Computerized reservation management system (CRMS)*</td>
<td>69.6</td>
</tr>
<tr>
<td>Own website</td>
<td>82.3</td>
</tr>
<tr>
<td>Email</td>
<td>97.5</td>
</tr>
<tr>
<td>Fax</td>
<td>99.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology</th>
<th>% Uptake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online reservations</td>
<td>53.8</td>
</tr>
<tr>
<td>ORSPG</td>
<td>33.5</td>
</tr>
<tr>
<td>Computerized accounting</td>
<td>77.2</td>
</tr>
<tr>
<td>Wireless hot spot</td>
<td>41.8</td>
</tr>
<tr>
<td>Internet café</td>
<td>24.7</td>
</tr>
</tbody>
</table>

Table 3. Technology Used in the Surveyed Businesses (source: Wilkin 2010)

*a transaction processing system that manages reservations, financial records and business reporting in a structured and routine manner.

Having detailed the chosen research methods and outlined the research context, the next step is to report on findings.

4 FINDINGS

This section reports on three findings: (1) general comments on the two survey samples; (2) findings from the first survey; followed by (3) findings from the second survey.

4.1 General Comments on the Two Survey Samples

Before presenting findings from the two surveys, it is pertinent to provide a few statistics about the sample. Firstly, with respect to ownership, it is noteworthy that the ownership of these SMEs has seen little change in the three year period. This situation may have arisen for a variety of reasons, including stagnation in business sales and unwillingness to lower business prices to meet prices that deflated after the corporate purchases in the mid 2000s.

There was a 39.3% response rate to the first survey (i.e., 158 from 402), with relatively even division between male (45%) and female (55%) respondents. 79.7% of respondents were over 41 years of age. Whilst some respondents were front-office staff (operational), the majority (88%) were middle management or owner/operators. Further, 68.4% of businesses employed between 2 and 4 staff, with most using the technology surveyed. 78.5% of respondents had 6+ years’ personal experience with computers (66.5% had 10+ years), thereby indicating a degree of confidence with technology, although actual experience with the systems used in these businesses was less (37.4% possessed 6+ years and 12.7% failed to answer the question).

Responses to the second survey (8.7% response rate) once again revealed a relatively even division between male (56%) and female (44%) respondents. The overwhelming majority were owners of the business (78.1%), with managers, middle management or front office staff comprising the others.
Respondents saw themselves as innovative and adventurous with technology and software, using software in the business when they needed, although approximately 50% found that staff made mistakes when the business adopted new software packages. When probed on how inventive they described themselves and their staff to be with software packages (computer systems), 59.4% indicated their park had no need at all for social media such as Twitter, Facebook or direct mail outs from their own database of clients. This statistic is interesting and may help to explain the observed lagged uptake of ORSPGs. Overall the demographics of the two research samples suggest some stability in operational processes based on owners’ familiarity with their businesses.

4.2 Findings from the First Survey – 2008/2009

Given the importance of training to technology competency and uptake, it is interesting that respondents to the first survey (see Wilkin 2010) had high levels (high/very high) of self-taught training (73.4%) and of these: 48.1% had received this in a workplace, 22.8% via vendor training and 19% from schools/TAFE/tertiary institutions. This suggested that much knowledge about technology was acquired on site through experimentation. Further, it was found that 84.2% of respondents indicated practical experience with their businesses’ systems, and 68.4% indicated some breadth of knowledge with different systems. Regarding technology used, need was judged by asking respondents to consider the frequency of need for given technologies (frequently, hourly, daily etc. through to not at all) and then separately how regularly they used this technology (on the same scale). In every case perceived need was higher than actual use. Investigation of attitude and behavior towards change and technology (see Table 4 below) identified (as reflected in their agree/strongly agree answers) that most considered themselves to be innovative (70.2%) and enjoyed problem solving (74%). Only 29.8% indicated risk avoidance as an attitude, suggesting that the majority saw themselves as reasonably flexible and accepting of change.

<table>
<thead>
<tr>
<th>Attitude Towards Change</th>
<th>% Respondents Agreeing</th>
<th>Extent of Flexibility Regarding Use of Technology</th>
<th>% Respondents Agreeing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative behavior</td>
<td>70.2</td>
<td>Tailorability seen in CRMS</td>
<td>49.3</td>
</tr>
<tr>
<td>Enjoys problem solving</td>
<td>74.0</td>
<td>Willing to be playful with CRMS</td>
<td>57.0</td>
</tr>
<tr>
<td>Models originality</td>
<td>63.3</td>
<td>Views CRMS as constraining</td>
<td>35.5</td>
</tr>
<tr>
<td>Inventiveness with existing practices</td>
<td>60.8</td>
<td>Manages the Computerized Reservation Management System (CRMS) inflexibly</td>
<td>27.2</td>
</tr>
<tr>
<td>Avoids risk</td>
<td>29.8</td>
<td>Sees CRMS as restrictive</td>
<td>42.4</td>
</tr>
</tbody>
</table>

Table 4. Attitude and Behavior Towards Technology (source Wilkin 2010)

When attitude and action are compared, respondents seemed less responsive in applying their ideas. It is significant that 29.1% did not answer these questions. Of those who did answer, 49.3% agreed (agree/strongly agree) that the business’ CRMS could be tailored yet only 57% were willing to be playful with it, again indicating some conservatism.

Other questions required respondents to evaluate their performance against industry best practice. 13.2% of respondents failed to compare technology in their business with industry best practice and 5.85% failed to evaluate their business’ performance regarding operations, marketing, sales and customer service. The lower ratings of technology performance in marketing and sales compared to operations and customer service suggest that technology diffusion is yet to substantially move beyond daily practice (Wilkin 2010). Support for this is evident in respondents’ evaluation (mid/most successful) of their business’ performance compared to industry best practice concerning less tangible activities. Similar, but slightly higher patterns were found in respondents’ comparison of performance in applying technology to business strategy compared with industry best practice. Here customer service was rated highest (mid/most successful) with a rating of 69.1%, closely followed by operations. Accordingly, the meaning of customer service was probed via interview and explored by informal observation. With respect to customer service, results demonstrated that this construct was understood as efficient/friendly service at the time of booking and further whilst the customer was present, not the more sophisticated customer relationship management. In other words, the concern
was to understand and deliver on customer expectations. This pattern of success in customer service and reliance upon related established operational processes are significant given the attitude that ORSPGs are disruptive.

Analysis from the 2008/2009 survey suggested that within the surveyed tourism holiday park SMEs, technology was being used at reasonable levels, in various forms, particularly in normal practices like operations and reception. Use was less evident in more sophisticated processes like sales, marketing, customer relationship management or creating new markets and services. Although what has been achieved should/would enhance business performance, there was scope for improvement. Moreover, by comparing this data with Winston and Dologite’s (1999) factors that affect IT infusion, a range of motivational and inhibiting responses were identified (Wilkin 2010). Findings suggested that the poor adoption rates for more sophisticated technology partially related to a lack of appreciation of what could be achieved with technology as well as a perception that competitive advantage was dependent on existing booking strategies.

Of particular note was the poor uptake of more sophisticated technology such as an ORSPG (33.5% uptake) and online reservations (53.8% uptake). Anecdotal evidence, interviews and survey comments suggested a range of reasons for this. Firstly, cost was one barrier: setting up a payment gateway with a secure facility is expensive; and if third parties like wotif were used, the commissions can amount to up to 10% (noted by some businesses as being too great). Secondly, operational barriers related to the difficulty or time required to learn to use the system, the need to monitor it daily, the need to change existing routines and unwillingness to change from what was working. Thirdly, customer service was a serious impediment, as putting up stock for customers to access removes more direct customer contact at the time of booking. There was significant commentary that this contact was very significant in ensuring compatibility between the business and its customers. For example, unlike the hotel sector, variations like 1 to 4 bedrooms, 1 to 2 bathrooms, different kitchen and dining configurations, and the inclusion of dishwashers, spas, washing machines, air-conditioners and lounges were variables in most SMEs’ offerings. Moreover, in these SMEs, pools, spacious grounds, playgrounds and communal BBQ areas allow plentiful interaction between guests. Hence these businesses placed strong emphasis on listening carefully to guests’ expectations at the time of booking in order to sort their needs and ensure compatibility with their expectations and with other guests using the accommodation. ORSPGs not only require changes in office procedures, but they also alter the first point of direct contact the customer has with the business, which SMEs regard as a risk to their customer service competitive advantage vis-a-vis with hotels. Fourthly, ORSPGs require reliable online access at all times, which was difficult given some businesses were still using dial-up internet access.

In summary, ORSPGs were not diffused within this industry sector, with the majority perceiving it as a disruptive innovation that intervened in the immediacy of the customer relationships presently established through more conventional booking mechanisms. Even with email or online requests for bookings, many SMEs telephoned customers or emailed requesting further information before accepting bookings. Hence ORSPGs with their new operational business strategies were seen as threatening or contrary to existing successful customer service strategies. When linked with cost, businesses saw such technology as disadvantageous or disruptive.

4.3 Findings from the Second Stage – Three Years Later

As indicated above, a second survey comprising five-items was sent out to the same 368 potential respondents. This questionnaire focused solely on adoption of (and related motivation for) an on-line reservation system and an ORSPG. There were two reasons for the follow-up. Firstly, despite slow acceptance being evident in the first survey, evidence from within this SME context indicated a sharp uptake of this technology, with publicly available figures showing a 600% increase in accommodation sales via this channel (BIG4 2011). Secondly, an internet search of ORSPG use by these businesses (see below), indicated changing acceptance.

As mentioned earlier, prior to the second survey (which reported a 50% adoption of an ORSPG), an internet search was undertaken to explore the uptake of online reservation systems by the original 368 businesses as the nature of these systems meant they had to appear in the public domain. As a
benchmark, data related to the presence of the business’ own website was also gathered. Here the businesses “own website” was taken to mean one directly linked to the business itself not one provided via another party like a regional tourism site. Initial results showed 81.7% of the 368 businesses had their own website (down from 82.3% of businesses in the first survey). As this was very unlikely to be the case, careful scrutiny of the list of businesses highlighted 11 metropolitan holiday parks without websites. These businesses derived most of their business from permanent residents, which meant that they would have seen little relevance for themselves in the nature of the first survey. Deletion of these businesses from the sample increased the number of businesses with websites to 83.2%, which is possibly below what would be expected given general growth in engagement with the internet. However, the absence of further information meant further manipulation did not seem warranted.

For the purposes of this study, an ORSPG was distinguished from an online booking by examining whether a deposit was required as part of the online booking process, such that at completion of the transaction, the reservation was given a confirmed status. Moreover, an online booking was distinguished from an email inquiry by the presence of a structured form that the customer was required to complete as part of the reservation inquiry process, rather than simply inviting inquiries as a “normal” email via a hyper link. With these online bookings there was usually a promise on the businesses website that a reply would be made within 24 hours. Interestingly, with emails, one business proudly promised a response within a week!

Results from analysis of the remaining 357 businesses (see Table 5 below) showed that there had been a significant increase in the adoption and diffusion of technology related to online reservations within this industry sector during the three year period.

<table>
<thead>
<tr>
<th>Technology</th>
<th>First Survey</th>
<th>Analysis 3 years later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own website</td>
<td>82.3%</td>
<td>83.2%</td>
</tr>
<tr>
<td>Online reservation</td>
<td>53.8%</td>
<td>68.4%</td>
</tr>
<tr>
<td>ORSPG</td>
<td>33.5%</td>
<td>47.6%</td>
</tr>
</tbody>
</table>

Table 5. Comparison of Adoption and Diffusion of Technology Related to Online Reservations

As shown above, adoption of these technologies during the surveyed period had improved considerably, with analysis showing ORSPGs were now adopted by almost half of the businesses (47.6%). By discounting the 16.7% who lacked their own website, this figure rose to 52.5%. In reflecting on these results, it is important to note that some of the surveyed businesses are very small and very seasonal in nature, with very low turnovers. This may account for some of the lack of diffusion.

5 DISCUSSION

Results from the first survey demonstrated some diffusion of ORSPGs by early adopters, although actual uptake involved approximately half of the 70.2% who claimed to be innovative in their behavior and similarly approximately half of the 63.3% who claimed to model originality. Interviews with the stakeholders revealed that this innovation was, in general, regarded as disruptive as it was more high-end and radical in nature. In part the high-end component related to cost, as use of sites like wotif and lastminute.com attract costs (i.e., 10% commission) plus the usual credit card fees, whilst establishment of the business’s own ORSPG involved new web pages and an expensive payment portal at a cost of $10,000 or more at that time. The issue of radicalness was significant and related to how the tourism holiday park SMEs operationalized their reservation processes. The very nature of these businesses meant their range of accommodation was more varied than that typically found in hotels (i.e., standard hotel rooms to large suites). As discussed in Section 4.2, the SMEs studied felt that in comparison with the products offered by hotels and motels, their competitive advantage lay in the range and type of accommodation on offer and their capacity to match this carefully to customers’ expectations. Whilst for the surveyed SMEs, ORSPGs offered a radically different approach to managing bookings, the changes required to core business operations was a significant factor in the perception of ORSPGs being a disruptive innovation. Moreover the cost
and/or unavailability of broadband internet, the need to manage the internet offerings daily in relation to bookings taken by traditional methods, and general risk aversion (which 29.4% of respondents acknowledged as their attitude to technology), meant that technology like this was seen as a disruptive innovation.

A number of factors have contributed to the changed position with respect to the diffusion of ORSPGs since the adoption observed in 2008/2009. Firstly, whilst early adopters opted to, despite costs, utilize the radical technology to gain an additional reservation channel, over time this cost had reduced as access to payment portals had been developed by third party vendors. Herein commissions had lowered from 10% to less than 2% in many cases. Further, one franchise had subsequently developed its own ORSPG for its member businesses and the choice of commercially available ORSPGs had extended to include Netroomz, RMS and Trustwave. Secondly, knowledge about setup and management had been more widely disseminated through professional peak bodies. The same aforementioned franchise now even provides on-site support as part of its franchise fees with training that includes how to manage listed stock and how to avoid undesirable bookings. Thirdly, for many, the internet has become a familiar, reliable tool. Fourthly, email bookings have increasingly been seen as a nuisance, as well as a costly exercise in processing given the time delays in the to-and-fro of sorting what is available compared with what is desired by the customer, and then getting a deposit. Finally, mainstream consumers have become increasingly aware of the gains made by early adopters, which for one national group of these SMEs, has seen a 600% growth in business in 24 months (BIG4 2011). It is here that the relationship between ORSPGs and disruptive technology is quite insightful. The interviews and anecdotal evidence suggests that a prime reason for this success (which in turn has led to wider acceptance of the disruptive technology) is changes in the behavioral patterns exhibited by end-user consumers (customers). Being time poor, these consumers often make holiday plans at night or after hours, using channels that allow them to gain immediate answers. For them, instant knowledge that the booking has been made and confirmed is important as it allows any additional planning to be made and completed in a timely manner. Besides anecdotal and interview information, evidence that supports this changing position can be found in the concentration of ORSPGs into clusters related to franchises (which accounts for 48.7% of businesses with an ORSPG) and popular regional tourist destinations (which accounts for 68.5% of such businesses). Here powerful motivating forces include competitive advantage and/or knowledge about potential and actual lost bookings. Reflecting, it would appear that in the three year span ORSPGs have increasingly become more of a low-end disruptive innovation with related increased adoption into mainstream consumer businesses.

To summarize the findings in relation to the four elements (see Table 1) associated with diffusion (Rogers 2003), ORSPGs were not initially regarded as an innovation that offered competitive advantage, except by a minority who were willing to take a risk as they regarded the current reservation processes as being at the limit of performance improvements. For mainstream businesses, genuine questions apparently arose about the compatibility of these systems with customer service imperatives. However, by using third party sites like wotif, some businesses were able to trial ORSPGs without large investments in capital and without more than short term commitments. Concerning communication, support from within franchises helped, but equally significant were customers’ views. The time element has seen an increased rate of adoption as mainstream tourist holiday park SMEs realized that the external environment was changing and their competitive edge in customer service through traditional booking processes was being eroded by customer choice – in fact customers themselves were making new and urgent demands. As such, one key element behind diffusion of ORSPGs appears to be the social system, with change agents and opinion leaders being customers themselves.

6 CONCLUSION

This study, which has explored adoption and diffusion of a disruptive innovation, namely ORSPGs into tourist holiday park SMEs, provides several insights. Firstly, just because technology is already mainstream in related industry sectors (i.e., hotels and motels) and thus not seen by them as being either radical or disruptive, this may not, for a variety of operational and customer-service reasons, transcribe to other related industry sectors (such as the tourism holiday park SMEs reported on in this
paper). For businesses in the latter sector, radicalness of the technology related to a total departure from how they managed customer bookings. Moreover its expense, in terms of related commissions and/or set-up costs, made use of ORSPGs a seemingly high-end disruptive innovation. The changes observed in usage of this technology in the surveyed period of less than 3 years can, in part, be attributed to previously acknowledged factors like cost reduction (Constantiou et al. 2009).

Secondly, whilst prior studies into adoption of disruptive innovations have focused on the two-party interplay between the vendor and business consumers (i.e., Yu & Hang 2010), results from this longitudinal study suggest that there is a social dimension involved in this interplay, namely the end-user or guest. Given the increasingly significant role that technology plays as a social medium, and given these end-users’ familiarity with purchasing goods online, such imperatives are possibly unsurprising. Yet it appears that there is a lack of prior research into the relationship between this dimension and adoption of disruptive innovation.

Besides this theoretical contribution suggesting a need to look beyond a two-party interplay and consider the social dimension more broadly, this study contributes new knowledge about adoption of disruptive innovation technology by researching it in the domain of IS, where to-date only a few researchers have used this theory (Constantiou et al. 2009). On a practical level, this study contributes important data about barriers to the diffusion of IS and highlights factors that peak bodies and vendors should consider.

There are two limitations related to this study, which create opportunities for future research. Firstly, analysis is limited to a group of tourism holiday park SMEs. Thus, further studies involving other groups are warranted. For example, a comparative study with backpacker or apartment style operations that are less individualistic may elicit new factors. Secondly, the low response rate to the second survey imposes some limitations on the conclusions drawn, despite the significant commentary. Follow-up interviews with a greater number of stakeholders and those from different stakeholder groups, such as vendors and end-user consumers, would strengthen the findings obtained from this study and may provide other (possible) explanations for the change. Moreover, further examination of the linkage between the uptake of social networking technology and the observed uptake of ORSPGs is warranted.

Yet it is not without some irony that the findings concerning the significant role that end-user customers have in motivating adoption of a disruptive technology are presaged by the very author of this theory, although perhaps not quite as anticipated. In the words of Christensen et al. (2002 p.105), "Many of the most powerful innovations that disrupted other industries did so by enabling a larger population of less-skilled people to do, in a more convenient, less expensive setting, things that historically could be performed only by expensive specialists in centralized, inconvenient locations.” In this case it was the customer.

REFERENCES


