The Influence of net Benefits on Collective, Innovative, Configural System use: a Case Study of Small-to-Medium Enterprises

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Abstract: In today's business world, Small-to-Medium enterprises (SMEs) increasingly join their larger counterparts in regarding use of Information Technology (IT) and Information Systems (IS) as fundamental to business operations. For SMEs, investment in packaged software that has not been customized to individual enterprise needs, allows ready access to much of the IT function enjoyed by their larger counterparts. However, given these systems are not exclusively tailored to the enterprise and further given the collective nature of the work-place in these enterprises, the likelihood increases for work-arounds and unexpected usage to occur to manage enterprise needs. Studies that explore system use typically focus on individual use. Using an interpretive case study approach, this study considers users of a common system in individually owned SMEs to explore evidence of collective, innovative, configural (CIC) use, the causes of this and its impact on fellow workers. Results provide insight into the role of systems as dynamic business tools and show that despite impacts on financial and operational reporting, CIC use occurs for reasons of operational efficiency and also out of frustration with system functionality. This provides some insight into attitudes concerning Use and Net Benefits in the IS Success Model, which in turn informs system evolution.

Keywords: collective use, work-arounds, innovative use, configural use, small-to-medium enterprises, net benefits

1. Introduction

In the past investment in Information Technology (IT) was regarded as a business opportunity wherein an enterprise could gain competitive advantage or even create barriers to entry for competitors in the marketplace. Today investment in IT is seen as an essential tool for operating enterprises. Much has been written about the management of IT systems in large enterprises (Brown and Magill, 1994; Xue et al., 2008). Here the focus has been on system use at the individual level (Doll and Torzadeh, 1991; Szajna, 1993) and at the corporate/strategic level (Earl, 1993). In these contexts systems are normally used as a means to achieve a goal. However, instances arise that result in the normal functioning of the system becoming an impediment to ready achievement of desired goals. The dynamic environments in which these systems are deployed highlight the impossibility of designing "systems which are appropriate for all users and all situations" (MacLean et al., 1990, p175). This motivates innovation in the way the systems are used. Slappendel (1996, p108) define innovation as "the process through which new ideas, objects and practices are created, developed or reinvented". Such innovative use in the ebb and flow of work-place interactions, when linked with dependence on the cooperative input of individuals, affects strategic reporting and record-keeping functions.

Given use relates to the user's view of IT quality (Ozkan, 2006), understanding use in all its forms is important in progressing a more positive approach to system design (Avital et al., 2006). Adding to this complexity is the fact that collectives, such as groups (Dennis et al., 2001; Easley et al., 2003), organizations (Devaraj and Kohli, 2003), even nations (Dedrick et al., 2003), use systems. Moreover, members of these collectives may use the system more or less frequently and for different purposes, but there can be stable patterns in their use. This is referred to as configural use. However, despite system usage (Barkin and Dickson, 1977) being reviewed over many years, research suggests we still know little about it (DeLone and McLean, 2003). Consequently there have been calls to deepen insights into IT artifacts through conceptualization of systems in new ways (Burton-Jones and Gallivan, 2007). The objective of this paper is to respond to this call by illustrating what evidence exists of collective, innovative, configural (CIC) use in Small-to-Medium Enterprises (SMEs), its causes and how it impacts fellow workers. This understanding would provide insight into the constructs Intention to Use and Net Benefits in the IS Success Model (DeLone and McLean, 2003).

Like their larger counterparts, the benefits afforded to SMEs by IT systems necessitate new structures and processes. However, these are mediated by the close and inter-dependent working relationships

Reference this paper as:
Wilkin, C (2009). "The Influence of Net Benefits on Collective, Innovative, Configural System use: a Case Study of Small-to-Medium Enterprises" *The Electronic Journal Information Systems Evaluation Volume 12 Issue 2 2009, (p1807 - 198), available online at www.ejise.com*

in these enterprises. In this research an interpretive case study approach was used to understand CIC use in SMEs. This offers insight into human interpretations concerning IT systems (something that is fundamental in appreciating IT use, particularly given it's users who evaluate the fit between their tasks and software packages (Mathieson and Ryan, 1997)) and the processes that are intrinsically linked to their conception of work in these enterprises (Smith et al., 2007).

The importance of SMEs to the success of a country's national economy (Johnston and Loader, 2003) makes them a relevant research environment. For example, in Australia there are estimated to be around 130,000 SMEs. The annual turnover is between $2-250 million; they pay around 15% of total tax collected; and contribute a further 12% of total tax through the withholding payments (Australian Taxation Office, 2008). Likewise in China they account for 60% of industrial output and employ about 75% of the workforce (The American Embassy in China, 2002), whilst another study of SMEs in 62 countries found that their share of total employment was well over 40%, with reports of 86% in Chile, Greece and Thailand (Beck et al., 2004).

In reporting on this study of CIC system use in SMEs, the paper is structured as follows. After outlining the literature regarding system use, the research questions are posed. Following this the methodology is outlined and findings that revealed institutionalized CIC system use at a number of SMEs are reported. The paper then concludes with comments about future research and the place of this study in the context of IT research.

2. Literature review

2.1 Use

Barkin and Dickson (1977 p1) first defined use as occurring when "the output from the information system is included in the Human Processing System of a decision maker". DeLone and McLean's (1992, pp64-80) later definition of use as the "recipient consumption of the output of an information system" is no less helpful as it's really only significant for voluntary use. Better clarification was provided by Burton-Jones and Straub (2006) who, in drawing upon this and work by Szajna (1993), and Subramani (2004), defined system use as an activity with three elements wherein an individual user employs one or more features of a system to perform a task. At an operational level an individual user can use the system in one of two ways, exploitatively (the routine execution of duties) and exploratively (the search for and use of innovative means to achieve results) (March, 1991). Whilst exploitative use is consistently concerned with the normal operations of an enterprise, often the deepest engagement is at the exploratory level. Therein innovation achieves outcomes not realizable with normal use, but which facilitate more immediate results like improved customer satisfaction.

The investigation reported on in this paper considered innovative behavior as far more challenging because:

- for operational users, innovation is usually the result of past frustration about lack of desired or timely outcomes;
- for manager/owner users, it may affect the integrity of data for decision-making; and
- for system developers, it may indicate system deficiencies.

Through its study this research aims to extend understanding about the consequences and drivers of the interplay between Net Benefits, Intention to Use and Use as detailed in the IS Success Model (DeLone and McLean, 2003).

2.2 Innovative use

Given the ubiquity of IT and growth of off-the-shelf software packages that are less individualized to work-place requirements, the likelihood increases for innovations to become agreed and accepted ways of getting information into and out of an IT system. IT offers SMEs efficiencies in managing customers, financial record keeping and accountability for staff performance. Yet SMEs exhibit differences from their larger counterparts. In large organizations use is characteristically hierarchically segmented. In contrast in SMEs owner/managers use the systems for operational as well as reporting functions. Thus, for SMEs the extent of collective and cooperative system use is different and accordingly so too are the opportunities for an enterprise to accept and practise divergences from

normal system use. Consequently the opportunity for agreed innovation increases (Slappendel, 1996).

In exploring user's innovations the investigation was not concerned with work-arounds that may be a 'one off' response by an employee who has yet to master system functionality. Rather it sought to identify innovative use that has been hierarchically institutionalized as an acceptable/required way to handle a circumstance of system use. Investigation that explores the types, role and outcomes of such innovation offers rich opportunities to understand systems as dynamic tools that can be contextualized to their work-place.

Innovative use involves non-compliant user behaviors (Koopman and Hoffman, 2003), typically ad hoc strategies used to handle immediate and confronting problems (Gasser, 1986, p216). Here it offers a means to identify system dysfunctionality (Ciborra, 2002; Devaraj and Kohli, 2003) and even argue for system evolution (Zhang et al., 2005). For example, Diconsiglio (2008) investigated nurses working-around the barcodes on patients' arm bands when these codes could not be scanned because they were damaged. Here, given administering medication to patients is time critical, some nurses worked-around the problem by scanning duplicate wristbands, which they kept on their arms as a back-up; others simply carried pre-scanned pills. Similarly, the malfunction of an email system was overcome by locking the F9 key on the keyboard into a down position (Sharky, 2007). Both are examples of users dealing with a lack of system functionality in exploratory ways; however they differ from this investigation because there is no collective agreement across hierarchical levels to accept the practice as the normal way to achieve an outcome.

Whilst it is acknowledged that exploitative use should be valued as normal use of IT, it is important to focus on users' exploratory use of systems to advance literature about the inner workings and dynamics of IT use (Ciborra, 2002; Ferneley and Sobreperez, 2006) and the IS Success Model. This offers insight into the reasons for such acceptance in a cooperative/collective environment.

2.3 Collective use

Although system use has long been studied at the individual level (Davis et al., 1989), it is not the only way that system use occurs. Often groups of users work together, interacting in their use of a system to produce outputs that have been collectively generated and upon which they are collectively reliant. Indeed earlier research by Cross et al. (2002) found that workers relied on social networks rather than the internet or databases to find necessary information. This aspect of system use has largely been ignored and in contrast to the economic theory of collective action, which focuses on the provision of public goods, together with other collective consumption (Coase, 1937), collective use focuses more on the actual IS usage practices by workers in organizations, which can be driven by a number of factors including customer service. Arguably this area warrants further investigation and SMEs offer a rich environment in which to conduct such research.

In exploring this it is important to understand the distinction between individual and collective constructs. Morgeson and Hofmann (1999) define an individual as a person and a collective as an interdependent group of individuals with a collective goal direction. Further, in a multilevel construct, the system can be used differently at different levels: this becomes a collective when interaction occurs and interdependencies arise because two or more (entities) are mutually dependent on each other (Karsten, 2003).

Collective use, therefore, is more than social or task-related interaction among members of the collective. Collaboration, communication and coordination are essential components of any interdependency and constitute evidence of collective use (Burton-Jones and Gallivan, 2007). Further, they argued that collective use may take one of two forms: shared and configural. Shared constructs occur when individual use emerges at the collective level as homogeneous use among collective members. Configural constructs occur when members of the collective use a system more or less frequently and for different purposes, but there is a stable pattern to their use.

All of these theoretical constructs have relevance to IT use in SMEs where the workforce is not merely a group of individuals who use a system. Instead SMEs characteristically have several levels of users, with some members switching between functions. For example, some utilize the system operationally, like front office staff in accommodation enterprises: alternatively owners/managers use the system operationally when dealing with customer transactions, but switch to analysis/financial

functions for reporting. With the tendency towards off-the-shelf systems, the likelihood increases for agreed innovative use to work-around the lack of system functionality to achieve desired outputs. This relates to research by Sussman and Seigal (2003) who found that usefulness could be the mediating influence for workers in the knowledge adoption process. As a result it is hypothesized that collective use should exist, and when expected levels of agreed commonality of use are present, then that use should be both collective and configural. This impacts customer service and in turn customer service may impact use.

2.4 Customer service and SMEs

A focus on customer service is often regarded as the best method to progress an enterprise (Rorholm, 2008) with twofold benefits. Firstly, research has shown that increased customer satisfaction is beneficial to an organization's productivity (Kwak, 2003; Rorholm, 2008); and secondly a focus on consistent customer service will create a point of difference between the enterprise and its competitors (Business Wire, 2009). With their limited marketing budgets, SMEs are very aware that costs associated with attracting customers are higher than those associated with retaining customers (Kwak, 2003; Rorholm, 2008); and that investment in the development of quality customer service relationships will improve customer loyalty, retention and in turn profitability (Ennew and Binks, 1996; Vandenbosch and Dawar, 2002). Thus, the relationship between customers and front-line service providers is regarded as more significant for SMEs than for larger organizations (Batt, 2000).

Secondly SMEs are less likely to use consultants or research and development to extend the functionality of IT systems (Miles, 2008). Budgetary constraints may be part of the reason. A separate comparative study of IT management of SMEs in Canada and the USA found that the robust exchange of information between managers and others in the organization was reflected in the organization's ability to use IT innovatively in operational and strategic ways (Montazemi, 2006). Similarly, Miles (2008) reported that project management and on-the-job innovation are common ways of achieving service innovation.

Thirdly, SMEs tend to take a less strategic view of the enterprise and are more reactive to immediate needs than longer term goals (Rangone, 1999; Sexton and van Auken, 1982). In fact, a business plan is a necessity for larger enterprises given their size and consequently the formal demands of financial providers and/or shareholders. For SMEs these financial undertakings are often backed by personal guarantees, so many owners opt for the ad hoc option of thoughts about the enterprise, which are sometimes not written and certainly not backed with strict budget accountability (Brailsford, 1995). As such, SMEs may watch the gross returns carefully, but not the detail (Brailsford, 1995). These factors all ultimately impact customer service and thus the individuals concerned as well as the organization as a whole. Moreover, they impact IS Success.

2.5 IS evaluation

In attempting to structure the myriad of variables associated with the diversity of information systems, DeLone and McLean (1992) argued that there was little relevance in calculating input variables like user participation or level of IT investment with respect to information systems, if the dependent or output variable, IS Success or MIS Effectiveness, could not be calculated with similar accuracy. Herein IS success is "a value judgement made by an individual, from the point of some stakeholder" (Seddon, 1997 p83). Since DeLone and McLean's 1992 paper there has been much debate around the components of the IS Success Model and their operationalization (DeLone and McLean, 2003). However, the end of their model, which is concerned with Intention to Use, Use, User Satisfaction and Net Benefits has been least understood.

Given this background, from an IS evaluation perspective, it seems pertinent to ask:

- What evidence is there of CIC use in SMEs?
- What causes this type of use to occur?
- How does it impact fellow workers?

Answers to these questions provide deeper understanding about CIC use and offers some insight into its effect on the related components of the IS Success Model.

3. Research method and context

3.1 Methodology

As already mentioned, an interpretive case study approach (Walsham, 1995) was used to understand the evidence of CIC use in SMEs, the causes that give rise to such use, and how it impacts fellow workers. This method has been used in a significant number of studies that cover a range of topics and issues (for example, Orlikowski and Baroudi, 1991; Carey, 2008). Given the relevance of the method in exploring social issues (Walsham, 1995) and the "how" and "why" questions where a researcher wants to investigate events or actions in real-life contexts and has little control over these events (Yin, 2003), it was relevant in this study in investigating evidence, causes and impacts of CIC use across a variety of SMEs. Here the method facilitates drawing out the subtleties of human interactions with a system, something that is only possible with rich data.

Accepting Yin's (2003) stance on case studies, evidence of use in this case study came from documents (in this case training manuals); interviews; direct observation; and physical artefacts (such as house-keeping lists and check-out reports). The focus was on capturing participants' interpretations as accurately as possible, whilst also allowing the normal social exchanges that occur in interviews to take place. Moreover, by positioning as an outside observer, any perception of having a personal stake in the results was removed.

Participants were motivated because their concerns about operationalizing aspects of the system (Walsham, 1995) were appreciated. For each interview detailed notes were taken so that a conceptual understanding of system use could evolve (Corbin and Strauss, 1990). Further, as the interviews progressed the questions were refined and new ones added to clarify emerging understanding. To improve validity, results from the initial analysis were shared with a senior independent expert of the system. Collaboration was felt to be effective because participants expressed their own ideas, yet challenged those of other people: their opinions developed understanding about system use; and moreover most commented that they benefited from the process (which was in line with Levina and Vaast, 2008).

3.2 Research context: enterprises, system and participants

This study investigated SME tourist accommodation enterprises that are individually owned and operated, but are part of marketing groups called Beta and Omega. These SMEs were chosen because the author had practical familiarity with the context and because they operate in a dynamic environment. Both marketing groups are key players in one sector of the Australian tourism industry. Whilst neither Beta nor Omega mandate a particular transaction processing system, approximately 65% of enterprises have installed the same system, although each installation operates entirely independently, with no central server. This commonly used system is the focus of this study into collective IS use.

For Beta and Omega, the transaction processing system is the operational core, managing accommodation bookings, financial recording keeping and business reporting. Use is characteristically routine and structured. Further, activities that occur within the system are reported to accounting systems with financial information used, for example, to prepare daily banking. This system has been in use within the Beta and Omega groups for over 16 years, with multiple releases.

Participants in the study included front-office staff (operational level users) and site managers/owners (operational and managerial users). Most were confident users as they had at least 5 years' relevant experience in actual use of this system (many in excess of 10 years). The training provided to users varied, but included a combination of: what was provided at the time of installation; on-demand pre-booked telephone support; and refresher courses at annual conferences. Training was generally accessed by owner/managers, with front-office or operational level staff trained by their superiors. The remainder of users' knowledge was acquired on site as they experimented – usually by executing actual transactions, but sometimes by using the system in training mode.

Over a lengthy period, observations and interviews with 12 managerial and 25 operational users provided evidence of CIC use in the chosen SMEs. Interactions that occurred with participants took place in a friendly, collegial manner and were aided by copious notes, which facilitated the refinement

of questions in revisits. These revisits played an important role in clarifying understanding and enabled investigation of use that had not been fully appreciated in the first visit.

Participants were spread across 14 locations that were geographically dispersed and operationally different with respect to enterprise size, nature of bookings and managerial control. This meant that any common instances of innovative use were particularly interesting.

4. Case study findings

Five main areas were identified where there was consistent evidence of users' CIC use with functionality of the transaction processing system to manage various circumstances (see Table 1). Explanations for the innovations varied, but were all driven by operational imperatives. Some said:

> *"We could not let staff know about the discounted rates given to wholesalers (up to 50%) because otherwise our full fee customers could learn of it and want a cheaper rate"; or*
>
> *"Late check outs are painful and not worth the effort in managing cleaning staff, but at off-peak times they keep a lot of customers very keen to return for weekends so we manage"; or*
>
> *"Group bookings (a receptionist) are the commonest cause of front office error. One receptionist does one party and another does the next, so on one invoice you have credits for amounts paid and balance owing with that customer refusing to see how you can have this rolling balance until all have paid. Splitting this into separate bookings was the best thing we ever did"; or*
>
> *"I (an owner) got really upset one day when a receptionist had again failed to charge a customer for half their account because they had moved units and she had overlooked the second account for this part of the stay. The customer had to be contacted and it was all very uncomfortable so I resolved to find a way around this. The office manager and I worked out a solution and we all agreed to use it".*

In Table 1 (see below), six types of CIC use are reported. Each was identified at more than one site. Moreover, each had the same motivation, being operationally driven to please customers despite implications for managerial reporting/analysis.

Table 1: Examples of CIC use in the transaction processing system and categorized implications for the enterprise*

Functionality	Description of the functionality	User of the functionality	Problem	Collective, innovative, configural (CIC) use	Generalized implications/results *(see Table 2 for practical consequences)*
Pricing	Some bookings are sourced from wholesalers wherein the customer buys the holiday from the wholesaler and the enterprise needs to claim this payment less a commission fee from the wholesaler	Front office staff	The enterprise does not want the customer, nor office staff, to know the amount of commission and any discounts	1. Automatic pricing is overridden with the customer's receipt showing the amount owing as $0. Customers are happy because they have already paid the wholesaler and have the receipt showing that no money is owed	When these payments are claimed they are banked without being entered into the reservation part of the transaction processing system. Thus occupancy is known, cash flow is inaccurate and returns per room are understated
	Customers may request a late check-out for an extra charge	Front office staff in conjunction with Owner/ Mangers	This functionality is not available as part of the standard package	2. The late check-out fee is debited to the customer's account by adding a miscellaneous charge	Inconsistencies may occur in the treatment of customers. The system does not recognize this when printing check-out reports (and in producing cleaning

					rosters)
Functionality	Description of the functionality	User of the functionality	Problem	Collective, innovative, configural (CIC) use	Generalized implications/results *(see Table 2 for practical consequences)*
Yield Management	This functionality enables rooms to be priced according to demand with increased prices in periods of demand	Owner/ Manager	Front office staff ignore price fluctuations when taking telephone reservations because they take bookings by checking availability not pricing	3. The enterprise is obliged to honor the quoted price and consequently needs to override the higher price when checking the customer in	Loss of revenue
Check-out	On the customer's departure date the system expects everyone to check-out by the normal 'check-out time'	Front office staff	Cleaning rosters are generated at the start of each day. These detail the rooms to be cleaned	4. Details regarding late check-outs need to be manually recorded on the roster to prevent cleaners disturbing customers	Customer complaints would occur without manual intervention
Group Booking	This functionality enables a number of accounts to be linked together on a single invoice	Front office staff	Members of groups often wish to settle their accounts separately and demand separate receipts to record this	5. In this situation the enterprise actively ignores the group booking functionality instead recording the bookings as a series of individual bookings i.e., Smith 1, Smith 2, Smith 3 etc.	Information about the value of group bookings is lost
Caravan Storage	When a customer stores a car or van onsite between visits, the system handles this with separate accounts	Front office staff	The customer wants one account rather than multiple accounts	6. Group functionality enables the customer's individual accounts to be linked to one master account for payment	Information about group bookings is distorted

* All examples are in common use by at least one work-place.

By their very nature, once an enterprise started to manage a circumstance of functionality like those outlined above in a manner that differed from the normal functionality, it had to be collectively used in the organization or customer and staff problems were bound to arise. For each reported example, the system was collectively used at different, but yet integrated, vertical levels at two or more enterprises within Beta and/or Omega. Interactions between users at the relevant enterprises were ongoing as they grappled with the ramifications of system use. For example, owners/managers were aware of the implications of each use for analytical/reporting functions, but sanctioned those listed as being the best operational alternatives (see Table 2). This gave us insights into how interdependencies-in-use affected performance (Burton-Jones and Gallivan, 2007). As the reported examples are concerned with individual uses that emerge at a collective level in distinct outputs, it is argued, in Burton-Jones and Gallivan's (2007, p668) terms, that configural, collective system use had been observed, with glints of innovation (Slappendel, 1996).

Table 2: Implications for the enterprises from the CIC use

Collective, innovative, configural (CIC) use (from Table 1)	Specific implications for managerial analysis/financial reporting (comments from the sites investigated)
1. Automatic pricing is overridden with the customer's receipt showing the amount owing as $0. Customers are happy because they have already paid the wholesaler and have the receipt showing that no money is owed.	For confidentiality, payments from the wholesaler are confirmed against client records, but the amounts are not credited into that part of the system (so staff cannot read them). Instead the cheques are entered into the MYOB file and banked. This means that analysis in that category of accommodation is accurate with respect to occupancy, but returns per unit are understated. We made $50,000 per year from this so the effort and misreporting were significant.
2. The late check-out fee is debited to the customer's account by adding a miscellaneous charge	In charging the customer, some staff fail to read the notes in the IT file and consequently wrongly charge the customer or don't charge them at all. For a "walk up" booking requesting a late checkout, at times staff fail to add a note in housekeeping that will warn the house keeper about a later clean. At $10 per time charge does seem much, but you have to realize that you wouldn't have the rest of the booking otherwise ($200-$500).
3. The enterprise is obliged to honor the quoted price and consequently needs to override the higher price when checking the customer in	Manually over-riding a price in the system means that the price remains fixed and if the guest adds extra people or nights, the system will not alter the price. This means that staff have to remember to manually recalculate the bill or we lose money. Manual recalculation can produce errors and argument; and undue time spent at check-in. The loss of income per booking was usually not great ($20), but the angst and errors were not good for customer service at first point of contact.
4. Details regarding late check-outs need to be manually recorded on the roster to prevent cleaners disturbing customers	My guests are not happy if we do not offer this in off-peak times; and are not happy if they pay for being undisturbed and we overlook this and a cleaner knocks on the door. It costs management a lot of attention to detail.
5. In this situation the enterprise actively ignores the group booking functionality instead recording the bookings as a series of individual bookings i.e., Smith 1, Smith 2, Smith 3 etc.	Income per accommodation type is accurate, but in looking at sources of bookings, the role of groups is seriously under estimated. They are a major source of business for long weekends and Easter, but you only know this from the initial phone contact and by talking to guests. This affects marketing initiatives.
6. Group functionality enables the customer's individual accounts to be linked to one master account for payment	Group bookings as a source of business are mis-reported (this time upwards). We put up with it because it means that no one overlooks charging the guests for some of their stay and that used to cost us at least several hundred dollars per slip-up.

5. Insights from the case study

There are several notable outcomes arising from this case study. Firstly, there was variation in use of the common transaction processing system across different enterprises within Beta and Omega. This variation exists despite the well established nature of the system. Furthermore, evidence of both innovative and normal use was found. For example, looking at use of the group booking functionality, it was found that users in some SMEs used the functionality in innovative ways, whilst users in other SMEs opted to neglect the functionality altogether. Both represent work-arounds, but only one is innovative in nature.

Secondly, with respect to pricing functionality, a number of instances of user innovation were evident. Notably, it appears that some enterprises have been slow to adopt new approaches to market opportunities (such as wholesaler packages). In part some owners agreed that this failure was due to an inability to innovate around constraints of the system to handle the necessary transactions. Not only does this appear to impact negatively on the current operation of the enterprise, but it also hinders the ability of the enterprise to take advantage of new market opportunities because enterprises were unwilling to access new business opportunities when they perceived difficulties in operationalizing the system to accommodate the variation.

Thirdly, looking at use of the yield management functionalities, users in some enterprises used the system functionality faithfully. Others used the system ineffectively with obvious immediate negative effects on task performance as was the case when customers were quoted a price different from that in the system and manual overriding of the pricing functionality was the method used to manage this disparity. The same sorts of problems arose with the innovation created to handle the late checkout of customers. Here, once again, collective understanding and agreement were essential in managing this lack of functionality so that the customer was not affected.

Finally, where there was a consistent pattern in the examples of innovative use, these were typically performed at the front counter to manage customer transactions quickly and efficiently and/or to maximize customer satisfaction with the booking process. Delays, lack of clarity in the process and the production of incomprehensible invoices are not conducive to customer satisfaction (Yu, 2001). This pattern of using customer-friendly outputs had considerable impact on the reporting of data for both administrative and financial management records (see Table 2). Yet managers actively countenanced such outcomes.

Given the culture of service apparent in this case study, the decision to favor CIC use of the transaction processing system to ensure customer satisfaction is understandable. Moreover, in light of the fact that SMEs tend to take a less strategic view, their focus upon the immediacy of customer service (Appiah-Adu and Singh, 1998) explains the willingness by staff to collectively adopt innovative use as routine practice (configural use), despite the negative impacts on other reporting aspects of the enterprise function.

Results show that the SMEs who used the system in an innovative manner were among the more successful ones in their groups. As entrepreneurship has long been a characteristic of successful SMEs (Brailsford, 1995; Sheehan, 2006), this flexible attitude to IT use is unsurprising (the attitude to wholesaler packages is an example of this).

So in answer to the research question concerning what evidence was there of CIC use in SMEs, the support is clear: it occurs in a multitude of ways (see Table 1). In line with Slappendel (1996) there was evidence of agreed innovation. Moreover, this study has shown that in contrast to Gasser (1986), innovative use does not always involve ad hoc strategies. In fact these innovations can assume collective understanding and agreement amongst staff, such that they become common place so that customers are not affected. Understanding this type of use is important given it has managerial and thus organizational impacts. Moreover, capturing such deep understanding is important in system evolution. Yet, as with this case, system developers do not appear to be immersing themselves in the environments in which these systems are used to gather such deep insight which can enrich future versions of systems.

As for what causes this type of use, it would certainly seem to be driven by a desire to offer better customer service. Given customer service is seen as important for progressing an enterprise (Rorholm, 2008), this is perhaps unsurprising. However, those who used the system in this manner were operational users acting with management's agreement (again see Table 1). With respect to affects, given CIC use impacts financial, marketing and analytical reporting, owner/managers typically bear the ramifications. However, there are also individual impacts with flow-on consequences to fellow workers when they are directed by management to use the system in certain ways (see Table 2). Thus, there has been some conscious choices made about Net Benefits that could be gained from Use. Accuracy in reporting functions has been sacrificed to customer service: or in other words, environmental factors have directly affected Intention to Use, Use and Net Benefits.

Whilst the findings are insightful, there are caveats with the approach. Firstly, although multiple users were examined within the SMEs, these users were drawn from only two accommodation marketing groups (Beta and Omega). Secondly, given that approximately 65% of enterprises in these marketing groups used the same system, the focus was on users of one system. Thirdly, use of the system was mandatory in the enterprises studied. None of these caveats substantially detract from the findings reported in this paper. Instead they offer avenues for future research.

6. Future research directions

A logical extension to this study would be to take these understandings about CIC use and interdependencies-in-use and frame them as a set of specific questions in a survey administered to a

wider audience. Despite this investigation being carried out solely in Australia, the nature of the work environment and the relationship between users in SMEs within this service sector is likely to be quite universal. Therefore, replication of the study in other countries/other cultures should provide interesting data, allowing the study to evolve whilst still being executed within the existing methodological framework thereby making comparisons to support or reject the regularity of such practices in SMEs.

Reflecting on these findings in the context of DeLone and McLean's (2003) framework for conceptualizing the IS function, it is the components Intention to Use, Use (beyond Individual Use) and Net Benefits whose performance have been less understood. The proposed extension to this study (see above) would facilitate some understanding of these components through a practical study of users in their work environment. Moreover, by focusing on SMEs, there is the opportunity to talk with different types of users who are comfortable engaging with one another in the use of a common system, who share common frustrations with system functionality and who are likely to seek their own solutions rather than engaging consultants. Given that the literature to date has focused on larger organizations with more structured hierarchies and work demands, such an approach would be particularly informative.

Finally, this study raises interesting questions about the link between willingness to be innovative in system use and formal business planning in SMEs. Entrepreneurial skills have long been regarded as an advantage in the successful operation of SMEs and this study provides some thoughtful insights beyond the usual examples related to niche manufacturing or retail. Comparing the occurrence of innovative collective IT system use in SMEs with that in larger enterprises in the same service sector would be a further worthwhile extension.

7. Conclusion

This research has attempted to investigate, using an interpretive case study approach, evidence of CIC use in SMEs, its causes and how it impacts fellow workers. In doing so, valuable insights are offered into use that occurs due to frustration with system functionality.

Further, with results demonstrating that SMEs can indeed be innovative in their use of IT, there is merit in investigating this to expand current understanding about system use beyond individual use. Like Venkatesh et al. (2008), this work goes beyond system use as a measure of IT functionality and sees use in terms of task performance and as a consequence of interaction in the context of the system, the task, the user(s) and their environment. The CIC use was accepted as the chosen preferred option from a choice between a happy customer and tidy reporting information. Realization that this Net Benefit (customer service) was better than normal exploitive use was what created the innovative intention to use and consequent use, with these attitudes and uses becoming the norm. Herein there is clear evidence of the role of environmental factors (customers and the demand for good service) directly affecting Intention to Use and Use through the influence of Net Benefits that is outside the functionality of the system itself. Thus, this study has extended understanding of the central components of the IS Success Model (DeLone and McLean, 2003). Indeed the case study may suggest that in a workplace where close and inter-dependent working relationships are present, Net Benefits may influence Intention to Use and Use more than User Satisfaction.

Finally, this study shows that SMEs can indeed be collectively innovative in their adoption of IT systems. Given the impossibility of designing systems to suit all users in all situations, this is perhaps unsurprising. In this study, like Slappendel (1996), innovation was facilitated by communication between an organization and its environment. Further, given their critical role in the success of national economies, SMEs provided a rich source of data for conceptualizing understanding about interdependencies in CIC system use. Systematic understanding of such use is fruitful for achieving better insights that can feed in to evolution of packaged software applications and increase system longevity.

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