E-Commerce in the Public Service: Saving Postage or Reforming Governance?

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Abstract

This paper is a reflection on a previous study that investigated the opportunity for E-commerce applications in local government services. The study was performed at Salisbury City Council – one of the largest local government councils in Adelaide. Information was gathered from council employees, residents and businesses in the Council area. While the research appeared at first glance to address the needs of the community, the authors believe only current operational activities were considered and no regard was given to the potential benefit that the internet could offer in implementing broad policy objectives.

Keywords

Internet, e-commerce, policy, local government

INTRODUCTION

This paper is concerned with e-commerce strategy in the public sector, in particular local councils[1]. As will be shown later, the term e-commerce in the public service is often interpreted to mean such things as processing building development applications and their corresponding fees. This paper argues that the public service, as a mainly monopolistic organisation, offers a unique range of "products" that communities have decided carry too much of a social service component to be serviced by the marketplace. The public service therefore has a special role to ensure there is adequate staff awareness of the policy driving services, especially prior to any major systems development. It is our experience that council staff are in danger of not focusing enough on why their separate operations exist. With a more strategic perspective on the Council's role, staff can make more informed decisions about how modern communication technology and computing power can assist in enhancing their role.

The evidence presented in this paper to support our concerns is in the format of a reflection on a research study undertaken by a local Council starting to think about introducing some e-commerce services. The Council used the services of an Honours Degree student in Information Systems at the University of South Australia. He conducted interviews with Council staff and then used their comments to design a telephone survey of residents and businesses in the council area. The reflection is undertaken in the spirit of reflective learning loops as advocated in most action learning research methods (Argyris and Schon, 1996). It is

[1] Given the difference between Council services and typical products, the term e-services might be more appropriate but given the drive to "commercialise" the pubic service, the term e-commerce will be maintained.

unusual for an honour's thesis to include many reflective loops due to the time constraints and the career change that often follows the completion of study. However, as e-commerce in the public sector is a very topical issue, it was thought worthwhile to make an exception especially given the quantity of data gathered.

The reflective research method uses the interpretive methodology to provide an alternative perspective on a "completed" piece of research. It formalises the "review" process without requiring the original researchers to redraft their work. Many of the interpretive methods, such as Grounded Theory and Action Research, strongly advocate the need to include reflective loops. Learning cycles (or loops) occur continuously during any research process, however, to make the most of this method, it is appropriate to distinguish formalised loops from the informal. The termination and examination of an honours thesis, and then reviewing it for publication, is an example of a formalised loop. There is a clear and important end to the first loop. Merely "thinking in the bath" during a project is an example of an implicit or informal reflective loop. The act of interpreting written or recorded work also provides the opportunity for an "untainted" reflection, as does using people not connected with the original research, preferably with a different background from the original researchers.

With the permission of the student and his supervisor, the thesis was passed to two other Information Systems academics (co-authors), who had not been involved in the initial study, to summarise and present the initial findings as they saw fit and to provide comment. While not at all saying that the research should or could have been done differently, with the benefit of hindsight, the two "clean-skins" have taken on the role of coming up with guidelines for undertaking this type of study in the future. It presents a learning iteration.

The student was invited to a local council to do some preliminary work on setting up an electronic commerce facility. He interviewed the head of IT and numerous Council employees. From the data received, he designed quite an extensive questionnaire to ask residents and businesses what internet services they wanted from the Council.

The layout of the paper will be as follows; first the method, as described by the student, will be presented then, as far as the restrictions of space allow, the relevant results will be summarised. As this study included numerous transcripts of semi-structured interviews, only extracts can be presented. Finally, there is a reflection on those results.

THE ORIGINAL RESEARCH

The original research was conducted at the City of Salisbury (the Council), a large local government agency in South Australia. All employees who took part in the research worked at the Council's head office or the Council depot.

The City of Salisbury is one of the largest councils in South Australia. It covers an area of 157.6 square kilometres, with approximately 112,000 people living in the area and 3000 businesses operating in the area. Since World War II, the area of Salisbury has changed dramatically. Agriculture is no longer the main economic focus. In fact many technologically based organisations have based themselves in Salisbury.

The purpose of the research was to identify and test what services might be appropriate to act as a pilot e-commerce project. Some employees of the Council were asked, in unstructured interviews, for their opinions on the appropriateness of e-commerce for the Council and for possible applications. Next, larger samples of residents and businesses were telephoned using a pre-designed questionnaire aimed at finding their response to what had been suggested by the employees.

Due to the continuous increase of Internet use in South Australian households and the business world moving towards electronic commerce, the City of Salisbury realised there was a requirement to implement electronic commerce, as customers will increasingly demand electronic commerce in the future.

The Council currently had an Intranet and a web site, however the web site contained only static information and very little interaction between customers and the council could occur. A recent community survey (McGregor 1999) indicated only one percent of businesses and three percent of residents had actually visited the City of Salisbury's web site. Most employees had used the Internet and had a basic understanding of the Internet and electronic commerce.

The Samples

The City of Salisbury had approximately 150 employees in the head office, employed in various positions within seven different departments. Each department had a director who reported to the City Manager. Under each of these directors were a number of managers responsible for the day to day operations of core units. The Information Services manager was approached and asked to participate. He had been involved with all the information systems that had been developed at the City of Salisbury in the last 13 years. It was determined that no one else in the organisation had his experience or level of involvement with information systems developments at the Council. Therefore, he was asked to identify employees in the organisation who had some perceptions on the use of electronic commerce. He nominated thirty-three people who were employed in different units throughout the whole organisation. He asked these to participate. Twenty-eight were available. They comprised the City Manager, all seven directors and twenty other employees from various units.

To investigate residents' perceptions and issues about electronic commerce, two lists were obtained from McGregor Tan Research. McGregor Tan Research is Adelaide's largest market research consultancy firm specialising in strategies, marketing and social research. McGregor Tan Research had conducted several extensive community surveys for the City of Salisbury.

The first list was a sample of 200 residents randomly chosen from the population of residents living in the Salisbury area. The second list was a sample of 200 businesses randomly chosen from the businesses based in the Salisbury area. These samples represent only 0.2 % and 6.67% of the total population of residents and businesses in the Salisbury area.

The questionnaire was designed following the employees' suggestions and used to conduct telephone interviews with residents and businesses. Telephone interviews were chosen due to the higher response rate than mail-out surveys, and the ability for the interviewer to explain certain aspects of electronic commerce. This second reason was extremely important because electronic commerce is a fairly new technology and many people lack knowledge and understanding in applications of electronic commerce.

Prior to use, the questionnaire was tested on a number of council employees who lived in the Salisbury area. This enabled the researcher to gauge responses from the questionnaire and also monitor the time necessary to conduct the survey. After answering the survey, the employees were asked to give feedback on the questions asked in the survey and the structure of the questionnaire. This feedback was used to alter the questionnaire slightly.

From the 200 residents contacted, 158 residents answered the phone, with 51 residents agreeing to participate in the survey. Information was gathered on the reasons residents did not want to participate. Out of the 200 businesses contacted, 179 businesses answered the phone, and 72 businesses agreed to participate.

During normal working hours (9:00am - 5:00pm), the researcher attempted to contact all 200 businesses on the sample list. Once the phone was answered by a business, the researcher asked to speak with a business decision maker, either the owner or a key manager. A decision maker was asked for as he/she would be the person making the decisions concerning the business participating in electronic commerce. The researcher explained the nature of the survey and why it was being investigated, then asked if the subject wished to participate. If the subject declined the offer to participate, the researcher ask why they did not wish to participate, and thanked them for their time. When a subject agreed to participate, the researcher conducted the survey. At the end of the interview, thanks were given to the participant for their time and answers. If the phone was not answered, the researcher made a call back. If the first call had been made in the morning, the call back was made on the same day in the afternoon. If again the phone was not answered then, another call back was made the next day in the morning and afternoon if required. After the third call back the business was excluded from the research.

As many residents work during the day, the researcher made the majority of these calls after 5:00pm. When the phone was answered the researcher asked for an adult of the house. The adult was then informed about the research and why it was being investigated. Again if subjects did not wish to participate, they were asked why and thanked for their time. When a subject agreed to participate, the survey was conducted and thanks given for his/her time and answers. When a phone was not answered the researcher called back the next day. These call-backs were made in the morning, afternoon and at night, if necessary. After the third call-back the subject was excluded from the study.

FINDINGS

The Interview Results

Below are typical of some of the staff's replies in response to being asked what uses e-commerce might be to the Council.

Respondent 009: *…bill paying with payments of services…*

Respondent 031 *On-line surveys, forms that people could use to send feedback and opinions about plans and issues.*

Respondent 034 *[Dealing with …] Corporate signs. There is no reason why people can't access the application form electronically. …fees could be automated …*

Dog register - for registration on-line... We would then send out the [collar ID] disk.

Respondent *035* *GIS function, potential for users to be able to interact with a graphic application … for the display of mapping information*

annual report, press releases, quarterly news, (Salisbury.Aware)[a local newspaper]

an on-line encyclopedia of every single service that the organisation provides.

Respondent *096* *to fill out a form to request the undertaking of infrastructure work.*

Respondent *130* *If people want handouts … Complaints forms on-line*

Respondent *135* *… to lodge their complaints or faults …*

… payments for contractors,

Respondent *171* *A bulletin board where businesses could come in put something in and we could jazz it up a bit*

A database of businesses in the city, [with] links to state government bodies, federal government bodies…

The property register of vacant industrial and commercial land in the city…

Respondent *312* *Preferred contractors may be able to have access to confirm, so they could receive the details of jobs and put details straight back into the system, which will then automatically do invoices.*

Respondent *331* *[To] make payments to clients based on invoices they give us*

[To] make purchases from suppliers, so we [can] place orders

Respondent *596H* *Tender documents and development applications*

Hosting some local businesses on our pages, they pay us for a page that will increase revenue.

Sponsorship of local clubs and schools, by advertising them on our web site.

Incorporate a business directory that consists links to local businesses web pages

Respondent *134* *[library] catalogue … so people could order books, then pick them up at a central location or get them delivered to their home.*

Cemetery [services] where people can [ask to] leave tributes and flowers…

…booking a plot or taking a virtual tour of the cemetery…

Respondent *623Z* *…electronic selling [of cemetery plots]...*

The ability for people to leave a message and/or flowers via the Internet, people can leave their name, the deceased's name and the message that they want to leave … I have to go to the cemetery on a regular basis, I take the digital camera, pick what flowers are in bloom in the cemetery garden, and place the flowers on the [grave] with the message. I then take a photo of the site and then e-mail this photo back to the respondent. This means you could virtually put flowers on a grave from across the world. This can assist the disabled and overseas clients.

… run various courses in things such as grief management… dates, time and places of services

Respondent *635S* *… development applications*

Surveys

Anything that's a form based

From these suggestions the researcher identified several possible e-commerce applications that were then included in the telephone questionnaire to residents and businesses. Below is a brief summary of residents' and businesses' reactions to each suggestion.

Payments through the Internet

City of Salisbury employees discussed the possibility of having an electronic commerce application that allows customers the ability to pay rates, infringements, dog registration, and fees through the Internet. Many employees believed this application was not feasible currently because there is a high perception that the Internet is not safe for financial transactions. Many employees emphasised they would not place their credit card details on the Internet and believed that, due to the security risks, the Salisbury community would have similar perception about placing their credit card details on the Internet. However, 42% of respondents (44% businesses and 40% residents) said they would pay rates on-line if this was available.

Nursery

Nursery services that the Council offers were identified as possible electronic commerce applications. Possible applications discussed were the ability to give customers the capability to access a nursery database that allows customers the chance to view current stock and an ability to order and pay for stock. Many employees mentioned this as a possible application. However, due to some internal restructuring the staff most associated with the nursery's operations felt that it should not be presented as an option to residents.

Development Applications

Many applications are submitted to the Council for the approval of new building developments. The majority of these applications are submitted by businesses. It was suggested by employees that this service has the possibility of being conducted through the Internet, with applicants having the ability to submit plans and applications on-line along with the necessary payment. While 58% of businesses would welcome the opportunity of submitting and paying for applications electonically, no resident responded by saying they would use this facility because they sought interactive feedback prior to a formal submission.

Library

There are many services the library currently conducts which were suggested as having the possibility of becoming electronic applications. These include the ability to access the library catalogue, renew a library book, place a hold on library books, pay fees and fines, request information from librarians, access information databases to which the library currently subscribes, and promote the library services. 55% of respondents said they did not use the library service but, of that that did, almost 100% said they would like to use one or more of the applications mentioned above.

Recreation

Recreation services were suggested as having merit for electronic commerce applications, such as the ability to nominate a team for a sport, or the ability to access local sport draws and results. Response from the residents was very low for these applications, with 86% of saying they did not use the Council's recreation services.

Cemetery
The Salisbury cemetery services allow people to book and pay for burial plots. These were two services identified as potential electronic commerce applications. Other electronic commerce cemetery applications include leaving tributes for people, and touring the cemetery database which would allow the location of empty plots. Only three participants said they would use cemetery services on-line. Many participants answered no to using the cemetery services because they did not like discussing services offered by the cemetery.

Other Services
The telephone questionnaire asked residents and businesses to name services not mentioned on the questionnaire which they might seek from the Council's internet service. Numerous other suggestions were supplied. These included on-line complaint forms, maps, names and address of local businesses and feedback forms on Council services.

REFLECTIONS ON THE STUDY

With this sort of presentation of research results, it is very hard to include every comment and/or variation of any statistical analysis, especially under page limit constraints. The authors have to ask for some indulgence from the reader and accept that what is summarised does reflect the general mood of the interviews and our summation of the telephone questionnaires[2]. Furthermore, a reflection on any data collected is very personal to those doing the reflection. Different reviewers may see different things, as might the present authors on a different day.

As the authors have a research background, their first impressions were about the research method. The interviews were quite extensive, if rather broad-brush in the data collected. This has the advantage of not "leading" those interviewed into ritualistic replies, and enabling more opportunity for more issues to develop. Therefore, in general terms, the approach of interviewing a large number of staff and then telephoning residents and businesses does appear to be a fairly rigorous "normal procedure" as a first round attempt at gathering data. At the very least, the results have provided something concrete upon which to reflect. There is nothing quiet so clear-sighted as hindsight!

With respect to the telephone questionnaires, our first thought was that the suggestions (recreation, payments, library, cemetery), itemised to ask the residents and businesses, were not very enthusiastically received. Exceptions are the payment of rates and fees (42% said yes) and library services. While unenthusiastic about most of the suggestions being laid before them, the interviewees then provided a long list of possible alternatives. Our reaction to this was concern that Council staff was not in tune with the community's needs. But closer inspection of the staff's interview transcripts revealed that this was not the case. Most of what the interviewees wanted, the Council employees had mentioned. This then raises two other thought paths.

The first is that <u>different</u> residents want very <u>different</u> information. It will be hard to satisfy every person's specific demand for specific information without some careful planning. One response is to consider "playing the numbers game" and try to identify the information (service) that most people want most of the time. Alternatively, the Council may wish to give some priority to certain services such as emergency services. The problem with chasing the numbers, as is well known in business circles [Armstrong, 1985], is that it's of limited use to ask people what benefits they want if there is no cost to them, listing as many as they can

[2] Further details are available from the authors.

think of in the time available. Some more filtering is required. A more exacting test could be to try to observe what information they presently spend time or money collecting. Measuring this will need some imagination. Armstrong uses the unusual example of an art gallery that tired of trying to get "honest" answers about which paintings visitors most enjoyed. They reverted to measuring popularity by the size of the pools of water in front of paintings which were the result of run off from visitors raincoats on a rainy day.

While it did appear that Council employees were aware of its community's needs, there is need for a constant vigilance both of community's needs and capabilities and of those supplying similar information services. For example, the Council staff seemed a little out dated in terms of how many residents and businesses had access to the internet. Council employees estimated that 10% to 15% of the Salisbury community would have access to the internet. However, 53% of those interviewed (60% of businesses and 44% of residents) had access. With respect to other suppliers of services, a few Council staff did comment on this, one with reference to B Pay (a bills payment service available through the Post Office) and services such as 'Yellow Pages" which provide extensive business information. A front end to these services may be sufficient for the Council. A question staff might be asked in the next round is what such information services would be best sub-contracted out.

The residents' and businesses' long list of suggested "other" services also made the reflectors think about that familiar brainstorming problem of how a system designer goes from a long list of thoughts from Council employees to setting priorities and making choices. Armstrong's advice [1985] is that after brainstorming, it is necessary to follow up with a meeting that carefully prioritizes what has been suggested, using a pre set list of criteria. The newer electronic meeting software recognises this with is "polling" facility. However, some care had to be taken with this mechanical approach as straight polling can measure popularity rather than importance. Maybe the next task for the Council would be to take all the results acquired so far and meet to discuss the priorities.

The staff, residents and businesses produced long lists of wide ranging suggestions. While useful and interesting, such lists are often a sign of a policy vacuum. In effect respondents are saying, "We could do almost anything, what do you want done?" This very much mirrors a more general dilemma with the rhetoric that surrounds the Internet, and underlines why it is very important to set policy parameters before any investment occurs in this area. The problem is the mistaken impression that information provision can become "all things for all people." For example, the classic mistake with web page design is that the designer implicitly believes he/she can provide everyone with everything. Information needs to be targeted at an audience and priorities need to be set as to which audience should be given the most attention.

Policy Level

While all the above is relevant, the overall impression left by the thought that struck the two "clean-skins" was the general level of insight about the possible impact of e-commerce. Put very crudely, the level of analysis being offered was that e-commerce should be introduced because it would: (quote)

Save postage

i.e. it can offer a cheaper and easier way to access Council documents, including accounts. E-commerce was presented as merely being an operational efficiency on present services such as being able to pay accounts securely. The deeper implications of electronic communications impacting on strategic policy do not get a lot of mention. This issue of appreciating the strategic or policy implication of the technology on the entire functioning of an organisation has received extensive discussion in the IS literature. For example, Attewell

[1996] points out there is little evidence of the much heralded productivity improvements. This has caused questions to be asked about whether senior managers have marginalised productivity gain from technology to only clerical activity changes. King [1996] argues there are large gains to be made but only to those who can correctly integrate the technology to the organisations purpose. Morton [1991] warns of the large changes that technology will bring to organisational structures even if managers try to ignore it initially. Success involves driving the change to the Organisation's advantage, not letting it slowly rip the organisation apart from the inside. Truex et al [1999] take a more continuous evolutional approach saying that because the technology will change constantly, organisations will be constantly "emerging" and changing. Therefore they need to organise for change as a constant. Scarbrough [1998] addresses the issue from a corporate strategy viewpoint, pointing out that, unless IT is selected to align with the organisation's long-term strategies, organisations will struggle to compete.

With respect to the Council, and taking an extreme position for effect, does the presence of the Internet change the fundamental role of the Council? Does the technology offer the opportunity for the reform of governance such as:

- Could we have less layers of a more representative Government?
- Can residents vote from home at Council meetings?
- Can Council meeting go virtual and universal?

While it may not have been the brief of this study to consider local council reforms, the point that is being made is that a more strategic view could have been taken to look at the opportunities and threats that follow from the new technology. For example, the Nursery staff's comments that they were unable to consider e-commerce opportunities until they had finished some "internal restructuring." While the details of this case are not known, it is being suggested that such restructuring is an excellent time to look at e-commerce. Further, e-commerce may cause restructuring.

Coming down a level of analysis, the important strategic questions review the purpose of the Council;

- Why does it exist?
- What unique services does it offer?
- Why cannot the marketplace offer those services?

Then it might be asked, "Can the Council achieve its service obligations in a totally different manner with the presence of electronic communications?"

Moving down again to a lower level of analysis, the Council's processes might be reviewed to see if the technology can revamp systems. For example, it may be asked why parking meters exist. One possible answer is that they exist to implement a policy of ensuring office workers do not take prime parking positions from shoppers. While the new technologies are clearly making it easier to collect the monies from these meters with portable electronic diaries, the important question is whether the pro-shoppers parking policy can be enforced by some totally different means, given the modern cost of computers and communications. If, on the other hand, the presence of meters is merely to raise monies, then the question becomes, "Does the technology offer another means to collect revenue with a better return?"

Of course, some Council staff were aware of the need to consider these more strategic issues, but these type of comments are in a minority. Below are some of the relevant comments with annotations from the authors:

[The Internet will]

[ensure the] community is better informed, so they can get more involved with council

there is more potential [for residents] to be more influential

This addresses the type of broad governance questions mentioned above. It raised the questions;

- Does the community need more information, what information and why with what degree of urgency?
- How much are they willing to pay for this information?
- Do they wish to be involved with Council operations, if so, how?

We could reduce the number of staff … we may need to redesign our brand new office to take out some of the counters.

This staff member brings up the hard question about staff.

- Does e-commerce mean extensive re-staffing and office processes resulting in facilities re-design?
- Is there a policy on the impact of e-commerce on staff?
- How will the increased e-commerce costs be met if not from staff cuts?

The more information we give out, the more questions we get, and the more people will want to interact and take an interest in council business.

I do not think this technology will reduce the total amount of direct customer contact we have, but it will change the kind of contact we have,

This staff member also raises the question, "Will e-commerce mean more or less staff?" Historically, computer services have not reduced staff but rather re-deployed them while increasing services (Attlewell, 1996). This means extensive re-training may be necessary. The authors tend to believe this prediction on staff numbers rather than the reduction mentioned above.

the technology can extend the divide between the haves and have-nots

how many people use the aged and disability service? Will they have access to the technology and the knowledge on how to use it correctly?

Again, the bigger questions are being asked here. The public service is primarily aimed at providing services the marketplace does not provide adequately. Many old, sick and disabled are likely to resist doing business by e-commerce. Generally they often do not make good customers anyway, either due to their lack of spending power, their special needs or their lower consumption levels. Councils, as "businesses", will be under additional pressure to accommodate these types of customers. They may be forced to offer a dual level of service, physical and virtual, even with their monopoly position. Moreover, they may, in their public service role, have to compensate for the lack of appropriate services being offered by the marketplace.

We need to determine what path we are taking in implementing electronic commerce, is it to save money, improve customer service, or a policy direction?

This staff member does actually mention "policy" which was one of the very few times the word was mentioned in many pages of interview transcripts. He/she does not go on to elaborate on the implications of answering his/her question. If

done for "policy direction", it is assumed that the *policy reasons* for the existence of work flow procedures within the Council will be re-visited, rather than just looking for clerical efficiencies in those work flow procedures.

CONCLUSION

It is important that e-commerce does not just become a "clerical" level issue, more concerned with process that strategy or policy formation. This is particularly true in e-Government and e-Council. It is appropriate that procedural matters be improved using the priorities and beliefs of residents. However, this is only the "tactical" end of e-commerce. It is also essential that the leadership of Councils put in place processes that enable their organisation to give a lot of thought to how the technology can be used to deliver their Corporate purpose more effectively. A strategic application of the technology is required. For example, how can the technology be used to raise income, and identify community needs especially for the less able?

Much of what is being advocated by this paper is reflected is this last staff quote (below). As ever, the right concerns are available within the organisation, the problem lies in enabling them to speak out at the right time in the right manner.

> *When we went on-line with our web site it was because it was the trend, and an attempt to state "my site is bigger then your site". There was no attempt to look at what we should be doing, and how we should be doing it. We must look at who our customers are and what they really want.*

This needs to be done both strategically and in terms of processes.

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