Chapter 2

TEA TREE GULLY EDOCUMENT INITIATIVE

A CASE STUDY

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INTRODUCTION

In this chapter we present a case study of an initiative to use ebook readers for the electronic distribution of documents to members of a local government council. We examine the experiences and perceptions of those involved from the City of Tea Tree Gully (TTG)[1] and from the solution provider, eInfo Solutions.[2]

A number of general principles are drawn from this analysis. We identify a potential role for publishers in facilitating information management in organisational contexts. Further to this, we believe that an understanding of these general principles may lead to the design of solutions composed of a mix of products and services that better meet the needs of people in organisations.

It should be noted that the City of TTG and eInfo Solutions were pioneers in Australia in the adaptation of ebook readers for managing and distributing documents. The challenges experienced by each of these entities should be understood in the context of their respective pioneering roles.

BACKGROUND

TTG council's eDocument initiative was prompted in March 2000 when Ms Viv Greaves, the General Manager of Support Services for the City of Tea Tree Gully (TTG) was asked by council to identify

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[1] The City of Tea Tree Gully is a large outer urban area of 96 square kilometres on the fringe of the city of Adelaide in South Australia. The Tea Tree Gully council serves a diverse population of approximately 100,000 people.
[2] eInfo Solutions is described on their website as 'a company specializing in the sales and services of electronic document management and helpdesk technologies to the Australasian market'.

and analyse ways of improving the communication flow between the Civic Centre and elected council members.

The information infrastructure of Tea Tree Gully Council includes a significant use of printed and photocopied paper that is manually distributed between people. There are photocopiers on each floor of the Civic Centre. The council has an in-house person who prints, binds, laminates, distributes and finally shreds documents.

The volume of paper received from the Civic Centre increasingly annoyed TTG councillors–they perceived that there must be a better way to manage the distribution of information that would reduce the flow of paper and improve communication.

Ms Greaves was asked to come up with alternatives to the printing and photocopying of information, alternatives that would eliminate the costly courier delivery of documents, agendas and reports to councillors. Her exploration and analysis of the various alternatives incorporated a review of options that included fax machines, laptop and personal computers, and ebook readers. These options were considered in terms of their practicality, cost and in the light of the councillors' personal preferences.

Fax machines were quickly rejected because they simply moved the printing of paper to the individual councillors. Laptops or desktops were considered inappropriate because some councillors did not want the burden of having to learn how to use what they saw as a complex technology. Ms Greaves said, 'We would have had a number of councillors walk out [if we had introduced laptops]… they don't want to be forced to take up technology'.

Besides, laptops or desktops were perceived to require a lot of training and ongoing user support. They were perceived to be expensive to purchase and maintain and it was calculated that an extra full-time IT person would need to be employed to provide technical support to councillors. It was also considered impractical to expect councillors to read long documents of 100 pages or more on a laptop or personal computer. The perception was that councillors with laptops would probably print reports and bring printed copies, rather than their laptops, to meetings.

Ms Greaves eventually recommended to council the acquisition of thirteen SoftBook branded ebook Readers, which were A5-sized,

touch screen, modem equipped devices designed for reading electronic books.[3] Ms Greaves observed that the SoftBook Readers:

> … looked like a really good option… We had demos to the council members…to have a look at it and they were impressed with it… We looked at the (specifications) and everything looked rosy, everything looked quite possible.

The SoftBook Readers were purchased from local company eInfo Solutions, who was also contracted to provide a suite of document management and publishing software, user training during the implementation phase, and user support for a period of twelve months. The SoftBook Readers were received by TTG administrative staff in June of 2000 and distributed to councillors shortly afterwards.

Administrative staff began by electronically distributing the most simple documents, Council agendas and minutes. Paper versions of these documents were maintained alongside those distributed electronically until March 2001.

The SoftBook was used as a form of one-way communication between the Civic Centre and the elected councillors. Documents were created, usually in Microsoft Word, and converted to SoftBook format by council administrative staff and published to an online bookshelf–the term used to identify the online document storage repository–which was then accessible to councillors.

Councillors could not author and publish or share material with each other without submitting that material to the Civic Centre. The SoftBook Reader could be used to download material from the bookshelf, but could not be used to submit material for others to read. This arrangement suited the needs of the administrative staff.

Once material had been uploaded to the online bookshelf, councillors could download files to the SoftBook Reader. Some councillors downloaded files immediately while others would arrive half an hour before a council meeting wanting to download the agenda.

It was observed that 'it could take three quarters of an hour, or an hour to download at home whereas if councillors plugged in to the network here it might take five minutes'. These problems with downloading large files led to the distribution of some material by

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[3] Ms Greaves had become aware of eBook Readers as a potential solution after a member of staff attended a conference where they were demonstrated.

courier, including images and plans, as well as their electronic versions. Confidence in the capacity of the devices to deliver what was expected diminished.

After almost eighteen months of concerted effort from both entities, the City of TTG eDocument initiative was stopped. The experiences of the users, the councillors and administrative staff, ultimately led to the abandonment of the trial. Consequently the thirteen SoftBook Readers have been passed on to the councils library as ebook Readers for library patrons.

SO WHAT HAPPENED?

In this section we examine the perceptions of Ms Viv Greaves from Tea Tree Gully Council and Mr Chris Hosking from eInfo Solutions regarding what happened during the trial.

PERCEPTIONS OF TTG ADMINISTRATIVE STAFF

The perceptions of Ms Greaves, General Manager Support Services, City of TTG, relate to the following:
- Formatting and distribution of graphic material
- Spreadsheet formats
- Perceptions of vendor's role and performance
- Downloading issues
- Device functions
- Councillors' experiences

FORMATTING AND DISTRIBUTION OF GRAPHIC MATERIAL

A significant problem seemed to relate to the inclusion of graphic material in a SoftBook formatted report. 'We have a lot of attachments to our reports… we send out lots of photographs, maps and plans and things–and that is where the problem is.'

Ms Greaves observed that a desire to include such graphic material in council reports was a relatively recent phenomenon. 'In the old days we didn't attach pictures'. Her perception was that 'if you're using straight Word documents it's brilliant… no issues, no problems'. It seemed to Ms Greaves that the inclusion of graphic materials, and from multiple sources, was now commonplace and

that this use of visual data needed to be easily accommodated by the device and the publishing and distribution software.

The TTG administrative staff described how they would create a single Word document by combining reports from multiple sources and then embed images, including images of documents they had scanned, into that single document.

The administrative staff experimented with a number of methods of embedding images into documents but none of these methods was perceived to be successful when documents were read on the SoftBook Reader. Particular difficulties were experienced when attempting to scan and render large-scale documents of A3 size or greater. The TTG administrative staff compared the ease with which something could be photocopied with the difficulty of making that image suitable for display on the SoftBook Reader.

In terms of the SoftBook Reader's capacity to deal with such requirements, Ms Greaves said, 'I am still not sure of the capabilities of it… it still has a lot of limitations as far as scanned images go'. The apparent inability of the Reader to suitably accommodate scanned images was reiterated a number of times and perceived to be the Achilles' heel of the product.

The TTG administrative staff spoke of being unable to find a combination of procedures whereby an image could be quickly created and embedded in a document whilst maintaining acceptable screen clarity and rendering time.

SPREADSHEET FORMATS

The SoftBook Reader was also unsuitable for displaying spreadsheets, as the in-built software would only display documents in portrait format, while most spreadsheets are in landscape format.

The compromise solution of scanning the spreadsheet and inserting it into the document as an image was seen as impractical as the figures displayed were too small to be read. The inability to scroll across the page as well as up and down was also perceived to be a limiting feature of the device.

PERCEPTIONS OF VENDOR'S ROLE AND PERFORMANCE

In terms of perceptions about the services provided by the vendor, Ms Greaves formed the view that they really did not know the product all that well and seemed to be operating by trial and error.

As she pointed out 'they were learning along the way as much as us, we were the first users really. We would ask a question–how to do something, and would be told to try something–but in the end it was a role reversal… We were showing them.'

Ms Greaves felt that the service received was not consistent with the needs of novice users. It was not until the end of the trial that she saw the service as provided by the vendor as meeting their needs. The vendors were seen as willing and accessible but not technically knowledgeable enough to deal with TTG's practical day-to-day problems.

Her perception was that the technical expertise needed was not provided until 'it was too late.' As the administrative staff were learning as the project progressed, there was a sense that it was more time consuming for them than had been envisioned.

DOWNLOADING ISSUES

A further problem related to the uncertainty of whether or not councillors had successfully downloaded and opened documents sent to them. This sense of uncertainty was reinforced when councillors would call to advise that the download had taken hours or had stopped part way and had failed to complete. These experiences contributed to a loss of confidence in the system.

Some councillors began coming into the Civic Centre in person and downloading documents on to their SoftBook Reader via the Local Area Network. Using the network was much quicker and more reliable than telephone lines but at odds with the goal of being more efficient than paper and post. In effect the councillors were replacing the couriers!

DEVICE FUNCTIONS

The document managing and controlling functions provided by the SoftBook Reader were perceived to be a further limitation on effective use of the device. It was up to individual device users to manage and control stored documents. In practice some users allowed documents to accumulate–a situation which made access to specific documents in meetings slow and problematic.

The administrative staff thought that it would have been less frustrating but more work if housekeeping functions were up to them. Centralised management and version control of documents

would have permitted administrative staff to update, delete or archive defunct or redundant documents.

The creation of documents and posting to the online bookshelf was also perceived as not functioning in the way that administrative staff would have liked. Once a document was created and posted to the online bookshelf it was the administrative staff's understanding that documents could not be deleted or edited.

In time councillors appreciated the value of hyperlinks and bookmarks that allowed navigation between different parts of a document or documents. However, administrative staff found creating a document with these hyperlinks quite time consuming.

COUNCILLORS' EXPERIENCES

Some councillors were not comfortable or confident with computers. These same councillors said that they liked using the SoftBook Reader because it was not like a computer. It was perceived to be simple to use, much like a book. Opening the cover activated the device and instantly displayed the menu.

However, each councillor experienced repeated incidences of documents failing to download and tables or graphics that were unreadable or painfully slow to render on screen. Large documents had to be broken down into five or six smaller parts by administrative staff in order to facilitate downloading. Documents continued to be dispatched by courier when they could not be satisfactorily scanned and electronically distributed.

PERCEPTIONS OF THE EINFO SOLUTIONS REPRESENTATIVE

The perceptions of Mr Hosking, the General Manager of Business Development at eInfo Solutions, relate to communication breakdown, issues and solutions provided, and lessons learned.

COMMUNICATION BREAKDOWN

Chris Hosking believed the trial was stopped because of a breakdown in communication. Despite users' perceptions, he believed that the product offered by eInfo Solutions met the original articulated requirements of Tea Tree Gully Council, that is,

that it would minimise the use of paper; that it would be easy for councillors to use; and that it would be portable.

He believed that the perception of TTG administrative staff that eInfo Solutions was slow to address problems related to the nature of the service relationship. eInfo Solutions were contracted to provide advice and support when there were issues or problems to solve, otherwise there was no reason for them to intervene.

ISSUES AND SOLUTIONS PROVIDED

Chris Hosking's perception was that whenever there was a problem or issue, eInfo Solutions responded promptly with advice or specific solutions. The most persistent problems he identified related to the inclusion of large scanned images and scanned documents. These activities caused problems for administrative staff preparing documents and for councillors when downloading them.

Mr Hosking pointed out that, over time, eInfo Solutions developed specific operating procedures and templates for the preparation, formatting and distribution of scanned images and scanned documents. These procedures and templates were perceived by Mr Hosking to have addressed the specific problems raised.

He identified a further problem that related to the users' expectation that the SoftBook Reader could exactly reproduce documents they were accustomed to receiving in an A4 format. This was impossible given that the SoftBook Reader's screen was considerably smaller than this size. He described this expectation as a psychological barrier that some people dealt well with whilst others did not.

He also identified a set of problems related to changes in the Operating System used by the council's IT staff. This change was a downgrade from Windows 98 to Windows 95, which was not supported in the council's original specification; this shift caused the content publishing software to operate very slowly or not to work at all. Problems experienced as a result of this change, which were outside the control of eInfo Solutions, were believed by Mr Hosking to have contributed to users' dissatisfaction with the product.

Mr Hosking identified some of the ensuing problems as training issues. He believed that each of these training issues was addressed as it became apparent. He also commented that recent changes in

popular office software programs facilitating the use of ebook Readers would improve the experiences of both administrators and end users. He perceived that these changes would have alleviated some of the problems experienced by those involved in the TTG trial.

LESSONS LEARNED

Mr Hosking acknowledged that the people from both entities involved in the trial had learned a lot from their experiences. eInfo Solutions learned about the needs and practices of Tea Tree Gully administrative staff, while the administrative staff learned about the requirements and optimum arrangements for preparing, formatting and distributing documents in electronic format.

Mr Hosking believed that eInfo Solutions were now in a much better position to understand the needs of organisations like the Tea Tree Gully Council and his company has gone on to supply solutions to a range of organisations.

ANALYSIS

The SoftBook Readers and related software were perceived to be a solution to problems of paper flow and communication between the Civic Centre and elected councillors because:

- The device was cheap and cost effective;
- It would reduce use of paper, which was consistent with TTG's long-term environmental policy;[4]
- It seemed to require little training or support–the device had the potential to be quickly mastered by councillors;
- It could be set up to download information overnight, including Saturdays or Sundays, ready for councillors to read at their convenience;
- It enabled information between the Civic Centre and councillors to be secure and confidential;
- It was expected to reduce courier costs;

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[4] The City of Tea Tree Gully's web page declares, 'The management of the environment is a high priority (http://www.teatreegully.sa.gov.au/city/index.cfm).' Tea Tree Gully Council saw reduced use of paper as a particularly important motivation for adopting the SoftBook Reader solution.

- It was perceived to accommodate a need for last minute updates, changes and additions to documents previously sent to councillors.

However, the expectations of potential benefits offered by the combination of SoftBook Reader and related services were not realised. The trial was stopped and users have reverted to paper.

Was this simply a matter of the wrong combination of products and services? Was it a problem of misunderstanding the customer's needs? Perhaps it was a lack of knowledge about the product's limitations, or even a lack of expertise in the successful operation of the device?

If we reframe these problems in terms of a focus on the user and the user's practices, how might an effective solution be designed? What sort of entity might best provide the solution devised in this way? How can we make use of such an orientation to inform the ways in which printers and publishers design product-service mixes?[5] How can printers and publishers use their expertise and knowledge to take advantage of opportunities within enterprises?

In this section we examine the importance of roles and relationships. It seems clear that the roles necessary to articulate and sustain a viable combination of products and services in this context were confused. Inadequate attention was paid to the relationship between role players, which resulted in a communication breakdown between the vendor and the client.

There are a number of roles that can be identified in this case study. The administrative staff of TTG can be seen as playing the roles of editor and publisher. This includes an aspect of content management, resulting in the administrative staff being responsible for formatting, aggregating and adapting content to make it suitable for uploading to the software bookshelf, and for subsequent download and display on the ebook reading devices.

This combination of roles demanded a complex and disparate set of skills from the administrative staff of TTG. This complexity, and the ensuing problems faced by TTG staff and councillors, was not appreciated by the vendor at the time.

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[5] 'A product-service mix is the extension of the service component around the product for business activities that are traditionally product-oriented; and the introduction of a new service component marketed as a product for business activities that are usually service-oriented.' (Mont, 2000).

The important roles of editor, publisher and content manager in an organisational setting seem to be crucial to the success or failure of such a trial. The experience of TTG and eInfo Solutions raises some questions, such as;

- Are these roles ideally performed by users?
- What expertise is demanded of people performing these roles?
- What level of support would be required to adequately train users to perform these roles?
- If the complexity of these roles demands a specialist, where should this role reside? Should this role be inside the client organisation, the vendor organisation or somewhere else?

An understanding of the roles involved in a proposed system can only be arrived at once the practices and the context of the users is fully understood. Clearly the type and complexity of these roles will vary, depending on the organisational setting and demands of the users. Indications are that in this context, roles performed by TTG staff were beyond what could be reasonably expected of users.

Due to the nature of the relationship between vendor and client in the TTG trial, much of the vendors' understanding of the users' requirements was developed at a distance. This led to an abstract understanding of user practices based on periodic contact with the administrative staff rather than the end users–the councillors. Consequently the needs of the users (and more broadly the organisation) were not well understood, leading to inadequate initial training, and perhaps an inappropriate initial product offering.

As further issues for the administrative staff and councillors emerged, more training was proposed. Such an approach placed the users, in this case both TTG administrative staff and councillors, in a passive role. The users were being asked to comply with the demands of the technology, rather than a solution being created that closely matched the needs and skills of the users.

OPPORTUNITIES

A great deal of this confusion can be attributed to the fact that there was a mismatch between the offering of the vendor and the needs of the organisation. The vendor had a product on offer that consisted of a device and the software infrastructure to support it. The organisation needed more than this product offering alone.

The TTG administrative staff became internal service providers to the councillors, a virtual extension of the vendor, but without critically important technical knowledge and expertise. Given the complexity of procedural requirements necessary to manage the publishing and conversion software it was probably an inappropriate role for the administrative staff.

The authors suggest that the needs of TTG would have been better accommodated if they were offered a *mix* of product and services. In this case, the service component would consist of a third party performing the role of editor, publisher and content manager.

These roles would be especially suited to publishers moving towards a publishing service model. It is anticipated that a publisher could partner closely with the supplier of the device and software framework, and the two entities would offer a complete solution for the electronic management of the information infrastructure of the organisation. Additionally, this type of collaboration could be extended to encompass print on demand or larger scale printing, depending on the needs of the organisation.

In a scenario such as this, the users get the outcome that they want—a consistent and reliable flow of information, while the hardware vendor and publisher cooperate to create a new and worthwhile service.

This subtle shift in thinking is at the heart of a product-service mindset, creating the possibility for new services and relationships based around altered roles. A product-service mindset recognises a system of relationships between producer and consumer. A product-service approach opens up a range of new roles and possible activities that create value in the relationships *between* producer and users (Loi, 2001).

Moreover, such a mindset acknowledges expertise as the focus for developing roles rather than 'taken for granted' disciplinary labels which limit thinking to traditional activities. Breaking away from such a mindset could allow publishers to explore the potential to apply their skills in contexts where such expertise is in demand, opening up opportunities in non-traditional domains.

POINTS FOR FURTHER REFLECTION

We would like to isolate and expand on a number of important issues that emerged from our analysis. We believe these issues warrant further reflection. We would like to emphasise the notion that the context of the reader of this chapter is crucial. Therefore in this section we offer a starting point for discussion rather than prescriptive solutions. It is up to readers to assimilate and interpret such ideas in the light of the specific domains in which they operate.

THE PERSISTENCE OF EVERYDAY PRACTICES

Ms Gill Harrison, one of our TTG respondents, declared that she thought they were better off with paper because it could be picked up and read at an opportune moment, 'when the paper is delivered… they can pick it up and flick it through'.

The respondent's language was redolent with the physicality of the paper report, 'if they had it in paper and it is sitting there, there is a bigger chance of them reading it'. The paper report was perceived as an object/entity in its own right with a physical presence that contributed to whether or not it was read. This perception led the respondent to conclude that 'by not having the paper we were discouraging them to some degree, mind you it shouldn't make any difference, but in fact it did'.

The organisational context of Tea Tree Gully Council included long established, everyday practices that related to the printing and photocopying of information which was read and notated by hand. Such practices are manifestations of hundreds of decisions and micro procedures that together constitute stable patterns of behaviour. These decisions and micro procedures are the users embedded practices and it is at this level of detail that users need to be understood if successful product-service offerings are to be developed.

In order to recognise and understand such practices, product-service suppliers need to have a very close relationship with clients and users. These relationships are more likely to be partnerships than service agreements, and will work best in situations where suppliers and users share the same context.

REFRAMING EVERYDAY PRACTICES TO CREATE NEW ROLES

One way of framing up the practices of the administrative staff is to think about them as editors, publishers and printers of content, which they have aggregated with the material of others. The administrative staff distributed this published content to readers, in this case the thirteen elected councillors, in the form of printed matter delivered by couriers. The TTG administrative staff did not think of themselves as publishers, editors or content aggregators and distributors but in effect that is what they were doing.

Recognising these various activities as a potential role for publishers requires a shift in thinking. Such a shift opens up opportunities for new roles based around a clearer understanding of the expertise required within non-traditional domains such as, for example, the provision of information infrastructure within commercial and government organisations.

In our example the performance of a particular role relates to existing or acquired knowledge, skills and competencies that become the basis of a service provided in a product-service mix. Although it is not always clear when and where these new roles are possible, publishers will need to look for opportunities beyond traditional domains.

CONCLUSIONS

The SoftBook Reader solution was intended as an aid to information flow, a replacement for printed documents and as a means of improving communications between the Tea Tree Gully Civic Centre and the elected councillors.

The problems experienced with scanning images and tables, formatting, downloading and distributing documents led the administrative staff to declare the SoftBook Readers a terrific concept but one that failed to live up to expectations.

The relationship between TTG administrative staff and eInfo Solutions led to an exchange of knowledge so that over time each came to better understand the needs of the other. This exchange benefited the people from both entities but it was not enough to sustain the product-service relationship. A more detailed and complete understanding of users' practices was needed.

The importance of understanding users' practices, and the specific context of those practices, has led us to think in terms of the need for a shared context. By product-service providers sharing a context with users, commonplace practices are less likely to be overlooked. This means that the designer of a mix of product and services intended for a group of users should, for a time, share the context with those users. This is made possible when the product-service designer is embedded in the work environment of the user. This allows the designer to develop solutions with the users' *direct* involvement and in light of users' everyday practices. In this context the users are acknowledged as active participants in the design of the product-service mix and ultimately as co-designers of that mix.

This degree of immersion is feasible and appropriate during the product-service design stage for almost all organisations wanting to make a transition to an electronic information infrastructure. For larger organisations, it may even be possible to permanently embed an employee of the product-service provider in the client organisation. Sharing a context with the users is the most direct method possible for understanding their practices, and serves to establish a strong bond between users and product-service provider. This engenders a sense of partnership between users and provider.

There are also opportunities for publishers and printers to develop partnerships and offer integrated solutions with hardware providers like eInfo Solutions, and for relationships to be forged with organisations like the council in our case study.

The administrative staff and councillors of the City of Tea Tree Gully and the product-service provider eInfo Solutions have, through their pioneering efforts, indicated that there is a demand for such a mix of products and services.

ACKNOWLEDGEMENTS

In January 2002, the authors interviewed by telephone Mr Chris Hosking, General Manager, Business Development, eInfo Solutions regarding his perceptions of the TTG eDocument initiative. Notes were taken during the conversation and used to inform the writing of this chapter.

The analysis in this chapter represents the authors' understanding of the perceptions and related experiences of the respondents. Where the respondents are quoted in the text their comments relate to the above-mentioned conversations.

NOTE

PROJECT-MU conduct all of their work in a collaborative mode. All authors contributed equally to this chapter and are listed alphabetically for convenience.

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