

adopting eBusiness in building and construction

*making eBusiness your business
— an introduction to improving small business practice*



CRC Construction Innovation
BUILDING OUR FUTURE



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Foreword



CRC Construction Innovation

BUILDING OUR FUTURE

This publication *adopting eBusiness in building and construction* is an outcome from one of the Cooperative Research Centre (CRC) for *Construction Innovation's* leading projects headed by Associate Professor Kerry London (University of Newcastle) with a project team comprising Mr Don Allan, Mr Dayv Carter and Mr Rob Williams (Qld Dept of Public Works), Dr Guillermo Aranda-Mena and Associate Professor Peter Stewart (formerly RMIT University), Mr Paul Crapper (Building Commission), Nicola Croce, (University of Newcastle), Mr Ross Guppy and Mr John Spathonis (Qld Dept of Main Roads), Mr Brad Marriott and Mr Gerry Shutt (John Holland) and Mr Neil Abel (Brisbane City Council).

The team examined information about eBusiness adoption in construction and other industries in Australia and internationally to bring together this publication. It aims to provide an introductory guide to key topics related to the adoption of eBusiness for smaller businesses with the view to improving your business processes and performance. It does not claim to have all the answers but will act as a resource that can direct you to other useful sources of information.

Construction Innovation is committed to leading the Australian property, design, construction and facility management industry in collaboration and innovation. We are dedicated to disseminating the practical research outcomes to our industry — to improve business practice and enhance the competitiveness of your firm. Developing applied technology and management solutions, and delivering education and relevant industry information is what our CRC is all about.

1.

eBusiness in building and construction



So, what is eBusiness anyway?

eBusiness is business or commerce that is conducted through the Internet. We all know that in business no-one is an island as you have to have contacts — clients, suppliers, customers and so on. It is vital to your business that you are able to communicate with your business contacts. Depending on the kind of business you are in, you need to be able to order products, supply invoices and statements, provide quotations or submit tenders, pay for goods or services received and lots more. You are accustomed to doing business face to face, by phone and by mail. eBusiness takes advantage of another *medium for communication*, one that can be faster, more reliable, more convenient and more efficient allowing you, the business owner, more time to deal with the other matters that need your attention.

The Internet is the medium that allows this communication to take place. There are quite a few tools that you can use to communicate over the Internet. Two that most people are familiar with are:

- electronic mail (email)
- the world wide web (often simply called the 'web' or www).

The Internet is not just for browsing webpages. It also provides the means by which other eBusiness and eCommerce applications 'talk to' each other.

What's the difference between eBusiness and eCommerce?

eBusiness includes all the many and varied business-related dealings you may have over the Internet. For example, something as simple as looking up a supplier's catalogue on the web could be described as eBusiness. eCommerce is a bit more specialised and includes such things as ordering, invoicing, paying for and receiving goods and services — in short, the situations where money is involved.

Metalwell Aust

Metalwell Aust/Asia Pty. Ltd., a small-to-medium sized subcontractor in Newcastle specialising in metal fabrication and light structural steel, could not imagine performing their commercial tasks without computers.

"Business costs have been reduced. It has also allowed us to pinpoint out-of-control elements and hopefully rectify them before a total disaster takes place. More recently our accountant installed and fine tuned the Internet contact as a means of transferring the data he needs."

Internet terms

The Internet is an interconnected system or network of many thousands of academic, military, government, public and private computer systems. These computer systems are dotted around the globe, connected to and communicating with one another over thousands of kilometres of cable, microwave links and satellite systems. You can connect to a large computer server through a dial-up or broadband telephone line or optical cable connection. It is then possible to be connected to all other computer servers on the Internet anywhere in the world. The Internet provides support for email, the world wide web as well as other more specialised eBusiness applications.

Email (electronic mail) may consist of text and/or graphics composed and transmitted electronically from one individual to another or to a group of individuals via the Internet.

The world wide web (www) is perhaps the most popular use for the Internet. It consists of a network of 'webpages'. Users may view and interact with webpages by using a web browser program such as Microsoft Internet Explorer™ or Netscape Navigator™.

Where are we with eBusiness?

While Australian businesses generally are well advanced compared with many other countries, the construction industry is somewhat behind. A comparison of the construction industry with other Australian industries shows that:

- it has the lowest percentage of businesses placing and receiving orders online, with Internet access and a website
- there was little growth overall in the percentage of businesses with Internet access and a web presence.

But this is not to say that the adoption rate of eBusiness technology by the Australian construction industry has to remain low. A number of construction businesses have already adopted eBusiness. It is not too late to start. eBusiness may well be the way you conduct much of your business in the future.

Research by the Victorian Building Commission in 2003 dispelled the popular view that builders did not use computers very much in their business activities. In fact, some 94 per cent of registered building practitioners in Victoria use them in conducting their business in some way.

While the most common use of computers by those surveyed is for accounting, bookkeeping and (postal) billing, the use of the Internet by registered building practitioners is actually quite widespread. Eighty-three per cent use email for communication and 81 per cent to access business-related information online. Other uses include project management (56%), access to professional development information (54%), procurement (42%) and resource management (40%).

Why would I want to do business electronically?

The most important reasons for using the new technology in your business are that:

- it can help reduce some of the costs associated with running your business
- it can improve the efficiency of your existing business processes as well as help create more efficient new ones
- it can improve the security of your business information, records and contracts
- it can improve the legal position of your business in disputes and obligations
- customers and suppliers can find details relevant to your company, lodge queries and place orders 24 hours a day, 7 days a week and you can do the same for them
- major construction industry clients, contractors and suppliers are increasingly using eBusiness and managing projects online. If you want to deal with them you need to get online too.

In addition to this:

- the cost of investing in this technology is now affordable, even for small businesses
- you can start with the most basic technology and add to it as required.

2.

Starting small



Can we start out small with eBusiness?

You certainly can! All you need is a home (or office) Internet connection — *broadband* is faster but *dial-up* will do for a start.

If you don't have an Internet connection there are plenty of Internet service providers (ISPs) out there anxious for your business — just check the usual phone directories. As a minimum, an ISP will provide email and web services. If you are seriously considering getting into eBusiness, you would be well advised to read through the rest of this booklet (and gather information from other sources as well, perhaps) before choosing an ISP.

What can I do with just an Internet connection?

Well, take email for example. Much of your business communication can be performed by email. You can keep in contact with your customers, suppliers, consultants and contractors/subcontractors by email. All you need is an email account and the email address that goes with it.

Your email address is an important link between your business, your clients and other businesses that you deal with. Just like your telephone number, it's a good idea to have your email address printed on your business cards.

Email messages are (usually) delivered very quickly so it is a matter of business courtesy that you should check your email regularly and respond promptly. That goes for your employees too if you have them.

What are some other things I might want to do?

Some other common ways to get started just by using the web are:

- gathering information from your suppliers' catalogues
- sending and receiving project documents
- checking out what other companies are doing worldwide
- pre-registering your company with clients on the web.

WC Griffin

As WC Griffin, a small painting subcontractor tells us: *"we use the Internet for business purposes related to email and banking... and for business administrative efficiency it was an absolute necessity... saving many hours of manual calculations"*. It has made their business more profitable but they do note that computer maintenance and consumables such as ink or toner cartridges can be expensive.

Connecting

Dial-up: *The most basic way of connecting to the Internet through an Internet service provider using a modem connected to a computer and a telephone line. It is typically much slower than a high-speed broadband connection and is not 'permanent' in the same way that broadband connections are. Establishing a connection by dial-up as the name implies, involves a phone call.*

Broadband: *A high-speed and large-capacity transmission medium that can carry multiple signals simultaneously. It forms the two-way link or Internet connection between users and Internet service providers and is capable of transmitting large amounts of data, voice information and video. Broadband connections are normally 'permanent' – that is the connection to the Internet is available whenever the computer is running (and the modem and any other networking hardware is switched on).*

Modem: *An electronic device that connects to your computer and enables you to send and receive data over a telephone line or optical cable connection.*

What about handling money electronically?

You may already be dealing with businesses that provide online tendering, invoicing and ordering or you may already use Internet banking to pay your business accounts. That's a good start. You can take another small step into eBusiness by registering with an Internet banking provider to receive payments from your customers.

Do I need a website?

You can certainly do quite a bit of eBusiness with just email and a web browser but having your own website is a great opportunity to promote your business to the world.

Many businesses now have websites to present information on the Internet. You can use a website to:

- advertise your business and its contact details (such as hours of business and location, email address, phone, fax and mobile numbers, special events)
- advertise the goods or services you offer, their prices and delivery
- open a window on worldwide customers and suppliers
- place your business in the worldwide marketplace.

Creating a website need not be a complicated task although it can be a time-consuming one. In some cases businesses develop simple websites using simple web-authoring software. Other businesses go further and employ a web consultant to develop more elaborate websites with special services suited to their own business needs. In either case, your website has to be hosted on a server. A server is a powerful computer that is permanently connected to the Internet. Your ISP will usually be able to provide hosting services (at a cost of course). You will probably want to register a name (called a 'domain name') for your website so that your website can be found easily.

It is never sufficient to just create a website and then forget about it. To be useful, your website has to be maintained so that the information it provides is always up to date. You need to have a commitment to the professionalism of your website.

Poorly designed and poorly maintained websites are more likely to do damage to your business than to improve it. In this context it is wise to beware the well-meaning amateur (and that might include you).

Jakob Nielsen identifies these three design priorities for business websites:

- **Communicating clearly** so that users understand you. Users allocate minimal time to initial website visits, so you must quickly convince them that the site's worthwhile.
- **Providing information users want.** Users must be able to easily determine whether your services meet their needs and why they should do business with you.
- **Offering simple, consistent page design, clear navigation,** and an information architecture that puts things where users expect to find them.

(Check out the rest of his article at www.useit.com/alertbox/design_priorities.html).

3.

Growing into eBusiness



This section will provide some information for those looking at getting into eBusiness a little more deeply. A good site to look up for more detail is www.e-businessguide.gov.au (download the 'getting started' booklet).

Do I need a more powerful computer?

The computer(s) you use for eBusiness need to be powerful and fast enough to run the Internet as well as the other applications you may need — for example, office applications like word processors, accounting software and the like. Some things to keep in mind are:

- Computers become obsolete quickly. You need to be able to budget for replacement at least every two to three years.
- Computers break down. You should make sure your eBusiness computer is from a reputable manufacturer and comes with good warranty and service conditions. Guaranteed service agreements are worth considering — after all it is your business.
- You need to be able to backup your computer quickly and easily. High capacity removable backup storage is essential.
- Don't forget to budget for printers (fast and high-quality laser printers are good), scanners and other peripherals.

Unless you are getting very seriously into eBusiness, you don't need a computer with the power of a web server. But you do need a computer (or computers) that can provide you with fast and reliable access to the Internet and any eBusiness applications that you use.

Dial-up or broadband?

This has been mentioned previously but as you grow into eBusiness and come to rely on it more and more, you will probably want to opt for the higher speed and permanent connection that broadband provides.

A tip — Your local library can provide you with Internet access

Most libraries also provide a start-up tutorial so, if you need assistance and your company is not connected yet and you want to visit some of the websites provided in this book, take it to your library and check out some of the material we have suggested.



What do I need from my Internet service provider (ISP)?

The most basic service that an ISP provides is, obviously, your connection to the Internet. But most ISPs provide additional services and some include hosting of eBusiness websites and eBusiness applications. In addition to the generic type of ISP there are other providers who specialise in, among other things, hosting eBusiness. Examples of these are discussed in later sections of this book and listed in *Section 10: Where to from here?*

Some things to ask your prospective ISP about are:

- **Web hosting.** In its simplest form, this involves the allocation of an amount of storage space on the service provider's powerful server computer(s) that you can use to place your webpages and make them accessible to the outside world. At a more complex level it can involve providing an extensive website for doing eBusiness including secure space for databases and other supporting applications.
- **Domain name service.** Well chosen Internet addresses help your eBusiness by being easy for potential clients or contacts to remember — perhaps if they see it on the back of your truck while stuck in traffic. Your service provider should be able to help you register a suitable domain name for your website.
- **Web design services and training.** This has been mentioned previously but there is a particular skill in being able to design an effective website — from both points of view of *attractive visual design* and *functionality*. You only have to browse around the web a little to find some very poor examples. Check out examples of your service provider's work.
- **Backup.** It is absolutely vital that your business data is backed up regularly and frequently. Your service provider should have schemes to ensure and guarantee this aspect of your business security.
- **Security.** There are a lot of people in the world who are prepared to steal and some of those people know a lot about information technology. Money, intellectual property, business data and identity are just some of their targets. Your ISP should provide protection from viruses and have firewalls and password protection systems to guard against the electronic versions of break-in, eavesdropping, tampering and forgery. For more information see <http://www.e-businessguide.gov.au/resources/tools> under the heading 'Protecting tools'.
- **Packaged eBusiness applications and training.** There are many ISPs who specialise in ready-made eBusiness applications of many kinds. These can usually be adapted to suit your particular requirements. The ISP would be expected to provide training and support to help you make the best use of your eBusiness applications.



- **Performance and reliability.** Nothing is more frustrating to most Internet users than having to wait for a website to load or, worse, to have an error message appear instead. You need to look after your eBusiness customers, clients and other associates (and yourself) by choosing ISPs who can provide a fast and reliable service.
- **Competitive pricing.** One of your main motivations for getting into eBusiness is probably to save on some of your costs of doing business so, obviously, cost is important. You can expect to have to pay both setup and recurrent costs for these services.

Do I need a LAN or an intranet?

If your business has more than just a home office and employs more than one staff member in the office you may wish to consider sharing access to your eBusiness applications between your staff by installing a Local Area Network (LAN) to link two or more computers together to share data and other resources. Setting up a LAN is a simple process and it can be 'wireless' if you wish. The computers that are linked can share an Internet connection (not recommended with dial-up).

An intranet is a restricted network of connections where access is limited to company staff or selected groups of businesses. It is similar to the Internet but is more local. An intranet is a private network, not accessible to the general public but using the public Internet to share information or operations with suppliers, partners, customers or any other businesses with authorisation.



4.

Large construction websites

This section will answer some of the questions you might have about the eBusiness practices that large construction firms are adopting.

What are portals?

A recent trend in the construction industry has been for businesses to register on online construction portals. Construction portals are websites that typically bring together many businesses of all sizes so that they can conduct a number of eBusiness activities. Registering on a construction portal provides you with a place to:

- see up-and-coming projects
- register your expression of interest for projects
- manage information during design and construction
- gather information on how to do things better
- find advice on eBusiness tools, software and hardware
- obtain project documents for tendering
- submit tenders
- send and receive invoices
- find other business opportunities.

Portals are about providing information to businesses — they are about self-service. Some portals walk you through a task, but others are not so user friendly. Some portals require a fee and can become a cost to your business. So weigh up the benefits and opportunities against the costs. Many portals are secure, but always check the security and professionalism of these sites.

How about an example?

John Holland is a large construction organisation that has adopted eBusiness through its use of Optus inCITE applications for document management, tender management and purchasing on more than 30 projects. Refer to www.optusincite.com for more detail.

The Prisons Infrastructure Redevelopment Program in Risdon is one of John Holland's projects that takes advantage of the inCITE Document Management application to manage correspondence and document distribution. As the project is being undertaken by a joint venture, the use of inCITE has removed the need for parallel systems thus helping to overcome the diverse locations of the joint venture participants and other key stakeholders.

Chris Wilson, Contracts Administrator for John Holland Fairbrother Joint Venture, and a staff member on the project tells us: "inCITE provides us with a reliable and effective storage, retrieval and delivery package that we use to manage the inwards and outwards distribution of all our design and construction documentation to the consultants and subcontractors".

"With regular maintenance visits, we have seen the system stabilise and be accepted by all site users who see it as greatly beneficial to their daily management of the project."

Could my current or future suppliers and customers already be collected together on a portal somewhere?

The following types of portals exist:

- **Government:** In Australia many government agencies provide some form of government portal where you can pre-register for projects, tender online and access general information about doing business with government.
- **Commercial:** similar to a government portal except with different lead clients such as Optus inCITE and Aconex.
- **Assistance:** a general collection of webpages which provide eBusiness information, tools and advice.

Government and commercial portals can also offer assistance in the form of information, tools and advice.

A key feature of portals is that they can provide an opportunity to become part of a construction eBusiness community. They can put you in touch with new clients and suppliers who are like-minded in their approach to eBusiness. Not only can this help you in your adoption of eBusiness but it can also widen your business opportunities.

An example of this is My Virtual Home (www.myvirtualhome.com.au) where residential building industry participants can advertise their businesses on a construction eBusiness community portal.

The portals mentioned in this section plus others have been listed in *Section 10: Where to from here?*



5.

Some myths dispelled



eBusiness is relatively new and because many people in the construction industry are unfamiliar with these systems a number of myths have developed. In this section we will help you to understand what is fact and what is fiction and, hopefully, demystify the use of eBusiness.

Myth 1 : “eBusiness is complicated and costly.”

For many companies eBusiness will offer substantial returns to the bottom line and it will help you work in our complex construction environment. Any reservations you have about how difficult it might be to introduce these systems can be eased when you realise that a large number of businesses in different sectors of the economy have already introduced them. If you don't want to invest heavily in custom-made systems, you can buy a web-based eBusiness service from a number of suppliers such as Optus inCITE and Aconex. *Section 4: Large construction websites* explains a little more about these types of suppliers.

Myth 2 : “eBusiness is only for large corporations.”

Some people say that the investment and difficulty of installing and implementing eBusiness systems makes it difficult for small businesses to seriously consider using them. This is not the case as the cost of computer hardware, software and training has substantially decreased. Most of these systems only need standard office computers and they will work with dial-up or broadband connections to the Internet. A number of ISPs provide safe and secure access to eBusiness applications, and simply charge for the use of their applications on specific projects. This makes it a low-cost option even for small projects. So there are already a number of eBusiness applications that any size of business can use. Organisations such as WebAlive (www.webalive.biz) offer low-cost, well-supported applications such as integrated web presence and customer relationship management, that make it simple, even for the smallest trade-based company to get started with some quite sophisticated eBusiness applications.

Esther Dyson

eBusiness offers businesses numerous opportunities and benefits.

As Esther Dyson, a worldwide computer industry analyst, tells us: *“It may not always be profitable at first for businesses to be online, but it is certainly going to be unprofitable not to be online”.*



Myth 3 : “eBusiness is not for family or small construction businesses.”

Some applications are designed for small construction businesses with a mobile workforce. They make use of enhanced SMS messaging facilities on a mobile phone. (One example is a system known as BSITE. See www.bsite.net.) Even though these systems are low cost, they can offer substantial value to your business. Simply using electronic payment and banking systems is a significant, yet realistic step into the eBusiness arena for smaller businesses. Modern eBusiness applications can work well for smaller, family-oriented businesses.

Myth 4 : “eBusiness is risky.”

As with most of our daily tasks there is an element of risk. The risks from eBusiness can normally be identified and considered and could come from:

- exposure to an insecure environment such as moving funds from one place to another, or storing confidential information that could be accessed by other companies, particularly competitors
- the investment of capital for new equipment, software and training
- the investment of time in new processes and systems
- potential loss of data or information caused by system failures.

Risks will be reduced for businesses that are simply implementing existing proven systems, as there will be considerable experience in the industry, and the benefits being achieved by others will be known. Businesses must also reduce the risk of losing data by consistently and systematically backing-up important data files. To further reduce risk, businesses can consider using ISPs who manage the systems, provide secure transactions and maintain the integrity of data stored in the system. *Section 8: Legal and security issues* expands on the legal and security aspects of an eBusiness environment.



Myth 5 : “eBusiness will only work in the long term.”

To satisfy yourself that this is a myth, you might want to take some time to read some of the large number of business case studies available on the web (see www.e-businessguide.gov.au for example). Look for cases which are similar to the eBusiness application you are considering. It will become clear that the returns from eBusiness start to be realised fairly quickly and are likely to be substantial over time. The rapid advances in technology in the past decade now mean that businesses can start receiving benefits soon after they have introduced eBusiness applications.

Myth 6 : “It is too late to learn new ways of doing things.”

The essence of eBusiness applications is that they work best when they introduce new ways of working into existing business processes. If we introduce redesigned business processes then we have the opportunity to make significant cost savings and efficiencies. Staff training and skills development are two of the issues often raised by businesses, but the advantage of eBusiness applications is that they use existing technologies, are designed for ease of use, and do not require substantial periods of training. Web-based eBusiness systems are no more difficult than navigating the Internet using a web browser, so most of your staff should be able to adapt quickly to these systems. It's never too late!

In summary

Throughout this book we encourage businesses to work with their clients or suppliers and develop clusters or networks of like-minded businesses. The cluster members share information and help their colleagues. This is particularly important when you are introducing new business processes that will ultimately impact upon the external business relationships that you have with other businesses. Working within these small groups of like-minded businesses is a good approach for those who are concerned about coping with change. But change will continue, and eBusiness will become more and more widespread as the industry moves to adopt new and efficient ways of working.

Managing change is critical when embarking on any new processes within your business. Good project management will improve the success of these new processes. Remember, the increased risk could also offer substantial competitive advantage, as your business will be able to market the unique value of these systems to your clients. As in any venture, you need to do your homework and find out how much the short-term cost will be balanced by the long-term benefits.

6.

Support for your business processes

Now that you are considering how eBusiness might support your business, it is important to step back and look at your major value-adding business processes rather than just focussing on the introduction of new technologies.



What are my business processes?

A business process is a series of business functions within defined boundaries (e.g. sales process, invoicing process, marketing process, tender process, documentation process).

Of course, each business will have a different set of processes as the range of services offered differs depending on the particular specialisation or focus. For example, a construction business might have processes for tendering, procurement, cost control and document management, while a design consultant might have processes for briefing, fee proposals, sketch design, developed design documentation, working drawing documentation, specification writing, contract administration and tender evaluation. In many cases these business processes will require the sharing and transfer of information with other organisations and companies, and you need to factor this into your future plans.

What about some examples?

Some other business sectors have already embraced eBusiness. You will probably be familiar with some of their new eBusiness applications — you might already use them. The more successful of these applications have provided customers with more value or lower costs as a result of re-engineered business processes.

Examples include:

- Internet banking facilities offered by the major banks. This has provided a new service delivery mode and given customers the ability to complete different transactions (e.g. bill paying, statements, loan applications, periodic payments) without having to go to a bank.
- Electronic ticketing applications of our major airlines (e.g. Qantas, Virgin Blue, Jetstar). The substantially changed ticketing processes have enabled a lower cost structure and reduced ticket prices.
- Online shopping including the purchasing of groceries, books and electronic goods (e.g. Woolworths Homeshop, Coles online shopping, Amazon, Harris Technologies). This has substantially changed the purchasing process and added convenience for some groups.

WebAlive

Organisations such as WebAlive can provide simple ways for small businesses to adopt eBusiness, using their integrated customer relationship management and email.



How can eBusiness support my business processes?

The examples of innovative eBusiness applications just seen have:

- changed the way businesses operate by enhancing their scope and giving clients a greater understanding of their businesses
- offered extra value to the customer
- provided benefits to businesses by enhancing their client base.

So, to gain the best value from your efforts you will more than likely need to innovate using an eBusiness application rather than simply automating or computerising an existing process. The use of new technologies to automate an existing process will not necessarily deliver benefits to your business or to the customer.

Once you have identified your business processes, it is important to determine which of these could be redesigned to achieve the best improvements and added value. Think through the following — the major improvements and values you are likely to be seeking to achieve a more competitive edge for your business will involve:

- increased value for your customers and partners from reduced processing times, fewer errors, improved quality, and ease of access
- a better understanding and meeting of customers' needs
- an increase in your business market share
- lower costs and ultimately increased profit.

Businesses that achieve the best returns from new technologies and processes are those that create new eBusiness applications. By being early adopters these businesses are able to achieve competitive advantages. The introduction of new eBusiness applications is not the sole domain of larger businesses. Small businesses have the advantage of being able to introduce change much faster than their larger competitors.



HunterNet

In the Hunter region in New South Wales there is a group called HunterNet who help other member companies. They also typically tender for projects in other localities as a group, and use the power of their combined resources.

There is more than likely to be a network of businesses in your area.



How can I develop new eBusiness applications?

Developing a new eBusiness application might seem like a major investment for your business, and one for which you might think you do not have the right skills. This might appear to be a barrier for businesses that are unable to acquire the people and money to successfully develop and introduce an eBusiness application. If this is the case for your business, think about working with a small group of like-minded businesses to reduce the risks and costs.

Can I buy something off the shelf?

Rather than develop a new eBusiness application, an option is to pay for the use of eBusiness applications and services offered by ISPs and from software vendors. These arrangements are similar in concept to mobile phone charges where you simply pay based on your levels of use. If you decide to do this, cost and time are reduced. However, it comes with the penalty of being possibly less specific for your organisation.

One other point that needs to be made here is that you could lose competitive advantage if tailor-made systems are also adopted by your competitors. So the decision to use generic or customised applications is one that needs some serious consideration.

What are the commonly used eBusiness applications in our industry?

Some of the more widely used eBusiness initiatives in the construction industry are in tendering, procurement, document control, project collaboration, correspondence management, project management, contract management, workflows and reporting. Some of the construction industry bodies that have adopted eBusiness to provide services aimed at helping small businesses include the Housing Industry Association (HIA), Australian Institute of Building Surveyors (AIBS), and Master Builders Association (MBA). These bodies have websites that:

- present up-to-date industry information, news and events
- offer advice to help companies with the day-to-day running of their businesses
- provide links to related business networks and industry bodies.



What about some training?

Once you have adopted eBusiness applications into your business processes, you may even wish to try the online training courses provided by industry bodies through their websites. For further information visit:

- Housing Industry Australia (HIA) www.buildingonline.com.au
- Australian Institute of Building Surveyors (AIBS) www.aibs.com.au
- Australian Constructors Association (ACA) www.constructors.com.au

As mentioned in *Section 4: Large construction websites*, there are several construction portals and others like Aconex and Optus inCITE, who offer businesses the use of web-based applications. In *Section 10: Where to from here?* you will find contact details for some of these providers.

To start you thinking about how you might use an eBusiness application, we suggest you read some of the published case studies on businesses available on the Internet and in printed form. These case studies demonstrate how small and larger businesses have been successful innovators with eBusiness and delivered benefits for customers and their bottom line. You will find a number of these sources listed in *Section 10: Where to from here?* We also recommend that you visit www.e-Businessguide.gov.au for additional information on training and expert assistance that is now available to Australian businesses.



What do clients think?

Paul Crapper, Director of the Building Commission in Victoria, believes that *“the compelling reason for building practitioners to adopt IT (information technology) is that it saves time and reduces risk, which generally translates into money.*

“Having access to a computer loaded with relevant software packages ensures that jobs like tax, accounting, managing projects, applying for new work and purchasing supplies take less time and are of a higher quality. IT enables discounted pricing via purchasing using such systems as Optus inCITE where different companies can purchase collectively thereby increasing economies of scale; and cheaper prices from bulk suppliers due to using electronic means rather than paper-based systems. The fact that ordering electronically is not restricted to normal business hours is a further good time-and-money reason for the use of IT in the industry.

“Furthermore, when applying for insurance, builders can easily present their financials and cash flow in a way that says this is my business and ‘this is why you should insure me’.

“The Building Commission’s overall aim of promoting the use of IT is to equip building practitioners to run their businesses better. The Commission believes this will both increase consumer confidence and satisfaction in the industry, and provide practitioners with the tools for long-term business success.”

7.

Getting started — the next steps

In this section we stress the need to analyse and thoroughly plan for the successful introduction of eBusiness applications for your business processes. Aim to redesign the processes that will provide the most value to customers and benefits for your business.

If you wish to achieve competitive advantage you need to be an early adopter, because once the value of these innovations has been demonstrated, your competitors are likely to quickly adopt them and dissipate any competitive advantage you have acquired. If your business has limited resources or seeks to minimise risk, then look at using one or more of the applications offered by ISPs. These should help to limit your costs but still allow you to move your business along the path of gaining knowledge and experience in eBusiness. Above all, move with or ahead of the industry and keep looking for new ways that eBusiness applications might improve your business processes.

So how do I ensure that eBusiness will deliver value to my daily operations?

We suggest you consider following these 10 steps:

Step 1	Identify whether your business is an innovator, early adopter, or a follower. Businesses in the first two categories are rare, and those in the last group tend to reduce the perceived level of risk by adopting only proven or mainstream processes.
Step 2	Review how customers' needs are changing and what operational benefits can be achieved by new business processes.
Step 3	List all of your major business processes, and rank them in order of importance to your customers and business, and by their contribution to the bottom line.
Step 4	Identify which of the existing business processes listed in Step 3 require collaboration and information exchange. For these you will have to consider applications that are compatible with those used by your customers, suppliers and the cluster of working associates to ensure that collaboration will be maintained.



Step 5	Review eBusiness case studies when deciding which processes may be redesigned.
Step 6	Scan emerging technologies, because they affect customer needs and influence business processes.
Step 7	Examine the applications that existing service providers offer and measure their fit with your specific needs. You probably should do this within your cluster of working associates so that you can improve collaboration on projects.
Step 8	Develop and justify your eBusiness plan. Ensure that it has a focus on the customer, that it seeks creation of value, transforms business processes and uses applications that are compatible with suppliers, and customers' needs.
Step 9	Examine your skills and abilities to deliver the eBusiness plan and work out how to acquire any skills that cannot be readily found. Adequate training for you and your staff will also be essential. Make allowances for this within the plan.
Step 10	Finally, while making certain that you have a narrow focus for each eBusiness design, ensure that there is an overall strategy to enable the integration of each eBusiness process.



8.

Legal and security issues



What are the legal and security issues related to eBusiness?

Several legal and security issues need to be considered when adopting eBusiness. Any uncertainty over the general legality of eBusiness ended with Commonwealth and state governments enacting the *Electronic Transactions Act 2001*. This is uniform legislation developed by the Commonwealth and state attorneys-general, derived from the United Nations Commission on International Trade Law's Model Law on Electronic Commerce. The Model Law sought to give national legislators a set of internationally acceptable rules that would promote the use of electronic communications.

As a result, the law now provides a regulatory framework that:

- recognises the importance of the information economy
- facilitates the use of electronic transactions
- promotes business and community confidence in the use of electronic transactions
- enables business and the community to use electronic communications in their dealings with government.

To give effect to these objectives, the Act relies on two fundamental principles: 'functional equivalence' and 'technology neutral'.

'Functional equivalence' means that equal treatment is to be given to both paper-based and electronic transactions.

'Technology neutral' means that equal treatment is to be given to different kinds of technology, which could include communication by fax, email, electronic data interchange, or some other form of data exchange.

Security steps

There are a number of important technical security steps relating to secure communications, access control techniques, and recordkeeping that can be adopted to provide greater security and peace of mind when conducting business electronically. These steps also provide a clear trail of evidence a court can consider if someone breaches the law. As an example, there are well-known standardised protection mechanisms that can be used to ensure that electronic communication is secure. The choice of mechanism depends greatly on the levels of authentication required for each type of communication, and this should be determined from a formal risk analysis.

For example, to ensure that you are conducting transactions online securely you should be aware of 'secure sockets layer'. This is identifiable as a small padlock in the bottom right-hand corner on the webpage. Its presence means that data such as credit card details and delivery address information are protected when they are sent to the online store.

For more information see <http://www.e-businessguide.gov.au/resources/tools> under the heading 'Protecting tools'. Other information on legal and security issues related to eBusiness can be found in *Security and legal issues in eTendering* which can be obtained through the CRC for *Construction Innovation*.

9.

Frequently asked questions



Q: Is eBusiness for me?

A: If you want to stay in today's competitive construction market and create new opportunities for your business and increased value for your clients, you should be considering eBusiness. You should check out the case studies of businesses who are taking on eBusiness and who are referred to in *Section 10: Where to from here?*

Q: What are the real benefits for a small business like mine?

A: You can increase your business opportunities and create profit and growth in a simple way. eBusiness applications will help you strengthen your relationships with other businesses and clients. They can also reduce risk on your projects and help you reduce the costs of doing business. In most cases electronic files will help you establish and process claims for variation to works and identify exactly what drawing or specification has changed during the construction period.

Q: Is eBusiness safe?

A: eBusiness is really no riskier than traditional ways of doing businesses. By doing your business electronically all your transactions should be recorded and saved. In Australia, the *Electronic Transactions Act 2001* has given electronic communications and digital files the same status as written communications and files at law. This Act facilitates eBusiness in Australia by removing existing legal impediments that may prevent businesses using eBusiness applications to satisfy legal obligations under legislation or the common law. If you use web-based eBusiness services, the transactions can be secure and ISPs will automatically secure and backup the project data for you. Details can be found at www.legislation.act.gov.au.

Q: How much is it going to cost me?

A: The basic entry point is a personal computer and a broadband or dial-up Internet connection with an ISP. Initially you will have to set aside some time for planning the introduction of the eBusiness system and for training staff. Modern eBusiness systems are, however, relatively simple to implement and use. Once you have completed the initial training and installation, the cost should be no more than the normal cost of doing business and probably less for most businesses.



Q: Will payments be delayed?

A: eBusiness provides a channel for doing business. Yes, it is possible for payments to be delayed but this will be no different from your more traditional method. In general, eBusiness should speed up payments. For example, if your project employs an eProcurement system, payments can be made directly into company bank accounts. The claim and approval process for an electronic system should save time as there is no need to re-key the details into financial or accounting systems and, once approved, these systems can instruct how the payment is to be made.

Q: Will I lose my current clients?

A: No — as you increase the amount of work you can do and become more efficient, you should increase the number of clients and at the same time have the capacity to maintain your current clients.

Q: Will all my practices/processes be transformed?

A: No, not necessarily. You will need to review your processes and decide which can be improved to return value to the company and clients. The best value comes from a redesigned process, but not all processes will require such a major change. Initially you might only exchange documents electronically, use Internet banking, and experiment with eTendering on a government or commercial construction portal. Then you might move on and redesign the key processes.

Q: How will I learn to do eBusiness?

A: There are plenty of organisations that can offer online training of various kinds. Some are listed in the next section. You need to set aside some time to study what is available. Learning with your colleagues or your business partners is a good approach as you can then support each other.

Q: How much support is out there?

A: eBusiness assistance programs for small business are well established. It is the lack of awareness that remains a problem. This book aims to improve the general understanding of the industry.

Q: What if I decide not to do eBusiness?

A: eBusiness is happening everywhere across all industries and business sizes. eBusiness will become less of an option and more of a necessity in the future.

10.

Where to from here?

Throughout this book we have given a number of sources of assistance for businesses considering introducing and improving eBusiness activities. We suggest you review both the national and international sources for information relevant to your eBusiness activities. These resources include case studies, 'how-to' guides and more detailed explanations of major topics, such as legal and security issues.

Australian businesses are quite well developed in terms of eBusiness uptake. You may want to go further afield and look at material developed overseas. The European and North American markets have developed substantial knowledge and materials for use by their businesses and some may be useful. Be careful of course, as material developed for an overseas market is not always readily applicable. It is, however, possible to find specific eBusiness websites for the construction industry, as well as a large number of more general industry sites and we encourage you to look at them.

On the following pages are a number of national and international website sources of information. Many of the published resources are available in electronic form for download or reading online. You can also buy copies of some of these reports.

Website addresses

Industry associations	
Australian Constructors Association (ACA)	www.constructors.com.au
Australian Institute of Building Surveyors (AIBS)	www.aibs.com.au
Australian Institute of Quantity Surveyors (AIQS)	www.aiqs.com.au
Housing Industry Association (HIA)	www.buildingonline.com.au
Master Builders Australia (MBA)	www.masterbuilders.com.au
Web-based system providers	
Aconex	www.aconex.com.au
BSITE	www.bsite.net
My Virtual Home	www.myvirtualhome.com.au
Optus inCITE	www.optusincite.com
Web Alive	www.webalive.biz
State and local governments	
New South Wales Office of Information & Communications Technology	www.oit.nsw.gov.au
Queensland Brisbane City Council Dept. of Main Roads Dept. of State Development, Trade & Innovation Dept. of Public Works	www.brisbane.qld.gov.au www.mainroads.qld.gov.au www.smartsmallbusiness.qld.gov.au www.publicworks.qld.gov.au



State and local governments <small>continued</small>	
South Australia Dept. of Further Education, Employment, Science & Technology	www.innovation.sa.gov.au
Tasmania Tasmanian Electronic Commerce Centre	www.tecc.com.au
Victoria Building Commission Multimedia Victoria	www.buildingcommission.com.au www.mmv.vic.gov.au
Western Australia Dept. of Industry & Resources	www.doir.wa.gov.au
National governments	
Australian Building Codes Board Australian Government Information Management Office e-business guide	www.abcb.gov.au www.govonline.gov.au www.e-businessguide.gov.au
Contractor/developer	
John Holland Group	www.johnholland.com.au
Innovative research, development and training centre	
Cooperative Research Centre for Construction Innovation	www.construction-innovation.info
International industry association/government	
Construct IT The Dept. of Trade & Industry UK	www.construct-it.org.uk www.dti.gov.uk

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Queensland Government
Department of Main Roads



Queensland Government
Department of Public Works



Queensland Government
State Development, Trade and Innovation

Building Commission



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