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A Continuum of Electronic Commerce Maturity – From Buying a Computer to Business Transformation

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Abstract

In this paper a model is developed from work by Earl and also the National Office for the Information Economy (NOIE). The model seeks to provide a framework to place small businesses on a continuum of maturity in their use of the Internet from 1. Computerisation, 2. Getting Wired, 3. Corporate Home Page, 4. Corporate Intranet, 5. Buying and Selling Online, 6. Adding Key Capabilities, 7. Decision by Wire, to 8. Let's Drop the "E" and transform. This model is then examined in light of case studies undertaken in four small to medium sized enterprises (SMEs). The model is useful both in placing a business of any size on the continuum and assisting in identifying the next stage of potential development for a company's systems. The model has been extended through insights gained in the analysis of the case studies.

Keywords

Business process reengineering, Business process transformation, Business systems planning, Change; computer literacy, Corporate strategy, Critical success factors, Organizational growth

INTRODUCTION

Small business is often differentiated from large business (Dandridge 1979; Welsh and White 1981; DeLone 1988; Thong 1999). The most significant difference lies in the manpower and resources available to the small business. It could be argued that such differences warrant the need for business models to be developed specifically to meet small business needs. However, like big business, there are many similar ways in which small business can improve. Most businesses are faced with the dilemma of choosing between the many directions of progress. There is a continual need to unravel the hype of *modern* business practices from those changes that will both benefit the business and also be practical in terms of the readiness of a business to undertake the change.

Rarely in the literature do we come across models for e-commerce/business that apply to both small and large business. Models for large business (Kalakota and Robinson 1999; Lee, Seddon et al. 1999; Earl 2000; Schnieder and Perry 2000), although very useful, do not take into consideration a small business that may not yet be computerised. On the other hand, models for small business (National Office for the Information Economy (NOIE) 2000) have the reverse problem. They do not seem to allow such businesses the room to grow.

This paper reports on case study research that has applied a model generated from combining two useful models. The first model is based on Michael Earl's paper *Evolving the E-business* (2000, p.36) which aims to help companies make sense of the e-commerce/business paradigm. The second model is based on an Australian report *Sink or Swim? Small Business Attitudes to Electronic Commerce* (National Office for the Information Economy (NOIE) 2000) which focuses on SMEs. This combined, more complete, model is then applied to four small businesses with a view to testing its applicability in helping understand the resistance and opportunities available to the business in e-commerce/business. In addition to testing the model's applicability, the model is further extended to include new insights arising from the case study material.

A FRAMEWORK FOR ANALYSIS

Before we get to the combined model first let us take a look at the two models separately. Following is a summary of Earl's model.

| | 1. External communications | 2. Internal communications | 3. E-commerce | 4. E-business | 5. E-enterprise | 6. Transformation |
	Corporate Homepage	Corporate Intranet	Buying or selling online	Adding key capabilities	Decision by wire	Let's drop the "E"
Focus	Corporate PR	Organisational glue	Online buying or selling	Building e-process	Business development and operation	Continuous reinvention
Motto	"Let's have a homepage"	"We're building and intranet"	"Let's do business on the Web"	"Let's do it properly"	"Let's behave like a dot.com"	"It's not new anymore"
Mindset	A modern dot.com company	A front-end and-or communication channel	A channel for commerce	A new business model	A new management model	A dynamic model
Result	Brochureware	Groupware	Early learning	Capability building	Decisions by wire	Comfortable in the new economy
Critical success factor	Content refreshment	Architecture design	Channel development	Process re-engineering	Information literacy	Continuous learning and change

Figure 1: *Evolving the E-Enterprise* (Earl 2000, p.36)

Let us look at Earl's explanation of each stage.

1.   External Communications – Corporate Home page

The notion of cheap advertising and global reach was the initial driver of having a Corporate Homepage. This initial brochureware type Homepage included annual reports, press releases, a listing of the company's products, job vacancies and recruitment details, frequently asked questions and information on how to contact the company. The level of interactivity however was limited to an email address for correspondence.

2.   Internal Communications – Corporate Intranet

IT professionals soon recognised the benefits of the Internet and focused their attention on Intranets using this technology. Designing user-friendly front ends to email, groupware, administrative support systems, and so on was soon seen as essential. Security, data consistency across systems, and synchronisation of database updates are all components of integrity and architecture.

3.   E-commerce – Buying or selling online

Buying and selling on the Internet is known in the media as *e-commerce*. Drivers of this stage included first mover advantages and a spirit of *can't afford not to*.

4.   E-business – Adding key capabilities

Building an online channel on top of inadequate and inefficient processes simply magnifies and broadcasts the fact that a company's back office systems are really bad. Enter the e-business phase and this is one of the major challenges. At this level a customer would be able to track orders online.

5.   E-enterprise – Decision by wire

With decision-making increasingly being by 'wire' there is pressure to "recruit, develop and empower people who have the skill to use information and act on it" (p. 37).

6.   Transformation – Let's drop the "E"

For organisations to survive in today's business world a culture of innovation, renewal and re-invention needs to be created. A healthy discomfort with the status quo is needed.

INCLUDING SMALL BUSINESS

Earl's Model is useful for companies that are already IT enabled. It assumes that a business is using at least a computer. This does not detract from the model, however to make it more useful we will extend it to include the adoption model/steps identified by the NOIE in their study of Australian SMEs. The steps in the Small Business Adoption Model (National Office for the Information Economy (NOIE) 2000, p.15) are depicted below:

1. Getting and using a computer as part of the business;
2. Getting connected to the Internet;
3. Using the Internet to research, to collect information, to communicate using email and do basic banking;
4. Setting up a dedicated website for the business, usually a home page, which is used in the business; and
5. Using the Internet connection to receive orders and place orders and to receive and make payments.

NOIE (2000, p.15) also identified a list of resistance to each step:

1.   Getting and using a computer as part of the business

- Computers are seen as an unjustifiable business expense.

2.   Getting connected to the Internet

- Could not justify the business expense – no evident/significant benefits;
- Characterised by 'established ways of doing things';
- Relationships that e-commerce was not able to satisfactorily replace;
- Stable and unchanging customer base;
- Established distributors offering significant discounts;
- Distributors and suppliers not connected to the Internet;
- A fear of losing significant discounts and businesses relationships that have served them well; and
- Oral communication existing as a strong cultural business tradition.

3.   Using the Internet to research, to collect information, to communicate using email, and do basic banking

- Having to dial up every time they needed to access information online.

4.   Setting up a dedicated website for the business, usually a home page, which is used in the business

- Lack of understanding of strategic use of a website in the running of a business;
- Not willing to provide too much information on the company and its activities for competitors to see;
- A belief that a website provides only limited benefit to the business;
- Fear of a website generating a flood of customer enquiries and 'nuisance hits'
- No clear business need;
- Cost of establishing a website is prohibitive;
- Limited access to technical skills;
- Lack of knowledge of reputable web designers;
- Manager/Owner not having enough technical knowledge to even know what questions to ask when hiring external consultants;
- Not enough time to devote to a website; and
- Low priority for management in using the Internet as a business tool.

5.   Using the Internet connection to receive orders and place orders and to receive and make payments for orders

- Fear and risk aversion;
- No immediate tangible business benefits;
- Security concerns; and
- Many of the barriers to establishing a website are similar to the barriers to adopting e-commerce.

A MORE COMPLETE PICTURE – A CONTINUUM OF MATURITY

These two models overlap to some degree. Below is a table showing a useful merging of the two models. Two new fields have been added horizontally, *Computerisation* and *Getting Wired*. Vertically one new field has been added, *Resistance*. They are depicted in *Italics* to reflect changes made to Earl's original model.

	Focus	Motto	Mindset	Result	Critical success factor	Resistance
1. Computeris-ation	*Modernism*	*"Let's buy a computer"*	*A modern company*	*Computerised Accounting/ GST*	*Computer literacy*	*1. No clear business need*
2. Getting Wired	*Connectedness*	*"Let's get wired"*	*A first step in the e-commerce direction*	*Extended/ Efficient communication capabilities Email/ Research/ Online banking*	*Internet/Email literacy*	*1. No clear business benefit* *2. Unjustifiable business cost* *3. Like things the way they are* *4. Customer base unlikely to get connected* *5. Preference for oral communication*
3. Corporate Homepage	Corporate PR	"Let's have a homepage"	A modern dot.com company	Brochureware	Content refreshment	*1. No clear business need* *2. Limited business benefit* *3. Lack of time & money* *4. Low priority* *5. Fear of too many 'nuisance hits'* *6. Limited or no technical knowledge*
4. Corporate Intranet	Organisational glue	"We're building and intranet"	A front-end and-or communication channel	Groupware	Architecture design	
5. Buying or selling online	Online buying or selling	"Let's do business on the Web"	A channel for commerce	Early learning	Channel development	*In addition to the points in 'Corporate Homepage':* *1. Fear and aversion to risk* *2. No immediate tangible business benefits* *3. Security concerns*
6. Adding key capabilities	Building e-process	"Let's do it properly"	A new business model	Capability building	Process re-engineering	*1. Unwillingness to change business model*
7. Decision by wire	Business development and operation	"Let's behave like a dot.com"	A new management model	Decisions by wire	Information literacy	
8. Let's drop the "E"	Continuous reinvention	"It's not new anymore"	A dynamic model	Comfortable in the new economy	Continuous learning and change	

Figure 2: Moussi's Adoption and Resistance Model

Implications of the Model

This extended model is a tool for managers of any company size wanting to assess their current level of adoption with a clear vision of future possibilities. It allows a company to assess the level of readiness needed to progress to the next stage. It also allows a company to be mindful of their own resistance to progressing to a certain stage or even fully benefiting from their current stage of adoption.

Methodology

4 case studies were conducted. The studies were carried out using structured and semi-structured interviews over a number of months with senior management from each company. In addition to aiding in the analysis of the case studies and placing each of them on the continuum, the aim of this paper and future research is to extend and further clarify this model and gain new insights. The case studies are assessed in terms of 1– Level of adoption; 2 – Resistance; and 3 – What's next.

DIFFERENT STAGES OF MATURITY – ANALYSIS OF CASE STUDIES

Company A

Company A is a family owned and operated business employing 60 staff. It was founded in 1952 and has survived through three generations. They produce 1 product in 9 different ranges and are part of the automotive industry. Their customer base is located in Australia and New Zealand. They have few large customers and rely on repeat business. They manufacture all products in-house and have a turnover of $8.5 million per annum. They are the market leaders in their industry dominating 52% of the Australian market, a position they have maintained for 3 years. Their business strategy is 'expanding into new markets'.

Although there is a Technical Manager, his main role is to manage technical drawings and designs and more recently he has taken on assisting staff in learning about email and the Internet. He was the main initiator of the Internet and email and believes that email is a tool everybody should be using. This company's use of IT/E-commerce is not large enough to warrant it being a separate function.

Company A have 10 desktop computers and 3 laptops. When interviewed mid 2000 they planned to introduce an Enterprise Resource Planning (ERP) system over the following 18 months. Currently they have seven e-mail addresses which, has increased from an initial three addresses. The main use of email is for communicating with suppliers and to receive technical drawings of parts from customers to ensure they are accurate. They have a brochureware style Corporate Homepage. The Internet is not seen as a tool to sell their product, as reliance is on personal contacts established over the years.

> *…I do not see the Internet as a tool to sell our product, however it could be important for International markets…we made a sale to Dubai from our Home Page…*

This company, although taking advantage of the Internet do not plan to make it an integral part of their business processes unless benefits can be justified. This is despite the fact that all of their customers are on the Internet.

> *…Before spending any more money benefits need to be justified…*

However there is evidence of further embracing the Internet to provide better service to their customers.

> *…future plans include putting parts that can be ordered up on the Homepage with their identification number so that way the customer can visually see the part and make a clearer order...*

Concerning research, the Internet is considered to be too slow. When doing research this company relies on conversations with customers as well as going for trips overseas.

Implications of Model for Company A

(a) Level of Adoption

Company A evidently is well past *Computerisation*, they are a *Connected* company with a *Corporate Homepage*, which is still, however, at the *brochureware* phase.

(b) Resistance

Company A does not take advantage of research as they find it too slow and find personal contact more useful for obtaining information from customers. If they are to fully benefit from this stage, they will need to focus on Content Refreshment.

(c) What's Next

They choose not to go past the *Corporate Homepage* phase until benefits can be proven.

Company B

Company B is a pharmaceuticals manufacturer, which specialises in herbal remedies, nutritional supplements, medical devices, personal care and household products. It has an annual turnover of $10 million and employs approximately 30 staff. Its origin can be traced back to 1867. It is an independent private company wholly Australian owned and operated. The main goals of the company are to further expand its operation and product range. Its customer base is predominantly in Australia but they also export to New Zealand and the Far East. Key customers are pharmaceutical wholesalers and grocery wholesalers. Their main business strategy is 'cost minimisation'.

Company B's Executive Chairman was the Internet champion in this company. The Accountant and Production Manager predominantly took on the task of implementing the Internet. The Accountant had a personal interest in this area and possessed strong IT skills. He fully customised the E-commerce software for their Homepage. The Accountant has since left the company, unfortunately taking his expertise with him.

They currently have 20 computers as well as providing every staff member with email. The use of email in this company is to communicate with suppliers and internally with staff. Approximately 50% of staff have both email and Internet connections. This company views the Internet as a distraction to staff and would prefer not to provide all staff with access until they have clear policies and procedures in place. Research is very important to this company and the Internet has dramatically improved the quality of this function.

> *…Research has greatly improved since the Internet. It has opened the door to new research. We now have an Internet researcher working 1 full day per week. Now we have access to Medical Libraries in the US and the UK as well as regulations…*

This company has a Corporate Homepage from which they sell their products. Interestingly, selling goods online was not the initial reason they established a Homepage. The initial reason was to provide an external medium from which people could obtain information on the company and products. It took 18 months before they added the online selling facilities which was driven by overseas customer queries about the ability to purchase products online coupled with management's belief that:

> *…If a customer wishes to buy a product, they should have all possible channels of sale available to them, including the Internet…*

Although this company has taken the initiative to sell online, it has not made it a top priority. This lack of priority is evident when justifying why they cannot attend to a problem on their Homepage immediately.

> *…We can't stop what we are doing today and put our IT guy onto it, it is going to have to wait a few days until we can afford to spend the time on it…*

This could be brought about by the disappointing sales results from their Homepage. Although their Homepage receives 2000 hits per month they are only generating 2 sales per month. Interestingly they do not consider this much of an achievement in the area of brand awareness. Benefits in this company needed to be of the tangible nature before more money and time was spent. Such a focus also appeared to demotivate them. Their Home Page is currently aimed at the end consumer who is not their usual target customer. Company B's main customer base is predominantly other businesses (B2B). They are clear they do not want to compete with these traditional sales channels. These companies are not purchasing online because they are reluctant to give up their 30 days of credit if they buy online (the online system requires payment by credit card). Although company B may appear quite advanced compared to other businesses of similar size they have not advanced their online payment system enough to be able to allow 30 days credit. This would require their online system to be linked into their ERP system, which may not warrant the expense.

Company B plan to penetrate the US market using a full Internet strategy, however it will be interesting to see how such plans progress when simple Homepage problems can't be attended to immediately due to lack of resources.

Implications of Model for Company B

(a) Level of Adoption

This company has advanced to the *Buying and Selling Online* Phase, even though they have bypassed the *Corporate Intranet* phase, which could be seen as unnecessary for this company

(b) Resistance

Company B has a fear of staff misusing the Internet, which they believe, will affect their productivity. They don't perceive their Internet initiative as being important enough to warrant rectifying a problem as soon as it arises.

(c) What's Next

With a cost minimisation strategy, it is unlikely that Company B will take the initiative or commit the resources to create a new business model and advance to Stage 6 *Adding key capabilities*. However, if they plan to get serious about doing business internationally through an online strategy this may be an area for reassessment.

Company C

Company C belongs to the civil products industry. It was initially an Australian manufacturer in a protected market but with deregulation and globalisation it was no longer viable to manufacture in-house. Deregulation caused them to go bankrupt three times which drove them to outsource their manufacturing operations to China, however assembly still occurs in Australia. They have an annual turnover of $13 million and employ 30 staff. The outsourcing of manufacturing has transformed them from being a manufacturer to being an importer/exporter service organisation.

The main business strategy is 'to improve customer service' through speed of response. The level of service they are aspiring to is being able to tie up the sale in a matter of minutes, as opposed to, a matter of weeks.

Company C consider themselves a design jobbing shop with no two jobs being the same. Repeat business does occur but rarely.

Company C relies heavily on IT. The main driver of the Internet is the Technical/IT manager. This is not a strategic top management decision. The Technical/IT manager has a personal interest in the Internet, and sees it as a tool to get a leap of productivity.

> *...we are trying to go global. We have to use the technology to achieve that. We have already gone off-shore to a developing nation to produce but we are having to control technology from here...*

Company C has 20 computers. All administration staff (15) have email addresses. They have an ERP system which is custom-built in-house.

> *Email is needed to communicate globally. It is needed to send drawings electronically. Globally email is the most powerful part of the Internet. The email service as such [ability to transmit drawings and pictures] takes on bigger proportions. The form of the information you transmit via email becomes far more important and we can operate because we are able to send a picture. Eg if I have a quality problem [with the manufacturers in China] I can take a photo of it as well as describe it, but he would have it in China in a matter of minutes, and his understanding is far greater, so in the global sense the visual is maybe of greater importance to us than the written and the ability to just send it off anytime is mind boggling. I don't need an interactive web address to function properly...A picture does not need cultural interpretation...*

There seems to be an ongoing struggle between the accounting 'bottom line' attitude and the forward thinking of the Technical/IT manager. Senior management have put a hold on further development of systems until sales have increased however the Technical/IT manager feels that such directives do not influence the work they are doing because they are driving things without being told.

> *...We design the system first, then we sell it to the company...*

Currently the company has a brochureware style Corporate Homepage but future plans include a Hompage that is fully interfaced with their quoting system. The quoting system was also designed in-house and has the ability to produce a quote in a matter of minutes as well a produce a customised installation drawing for a customer which could have taken up to 8 hours in the past. The quoting system in future may be provided to the Sales Reps on their laptops. Currently the reps call up and request a quote from the technical staff who developed it.

> *...Confidentiality and knowledge retention issues are attached to whether or not they will give reps the quoting system on laptops as we may lose our competitive advantage [if a staff member leaves and does not return a laptop]...*

Implications of Model for Company C

(a) Level of Adoption

Company C is at the brochureware style *Corporate Homepage* phase as well as the *Corporate Intranet* phase. This may initially be misleading in terms of how advanced this company is in its use of IT. However, Company C's greatest competitive advantage lies in the internal systems it has developed.

(b) Resistance

Accounting 'bottom line' attitude which is reflected in senior management having put a hold on further development of systems until sales have increased.

(c) What's Next

Future plans for Company C include a Hompage that is fully interfaced with their quoting system. Once unresolved issues around interfacing their internal systems with the Internet have been resolved, Company C will quickly jump up the continuum of maturity to the *Decision by Wire* phase.

Company D

Company D is part of a larger Australian manufacturer, which designs, develops, manufactures and markets automotive components, construction products and plastic products. Company D in particular manufacture products, which are largely used in the mining, quarrying, agriculture and construction industries. It employs approximately 200 staff and generates an annual turnover of $34 million. This company clearly separates IT from the Internet or E-commerce. E-commerce is run by Sales and Marketing and Operations people whereas IT

is related to software, hardware, routers, ERP systems however these groups liaise closely with each other. There is a culture of breaking down hard and fast barriers on how things "should be".

The business strategy for Company D has been multi-faceted. Last year they went through a 'cost minimisation' phase which resulted in the closing down of one of their factories. Alongside the cost minimisation strategy their was a strong focus on 'expanding into new markets' but not internationally as the company felt that that required having their own backyard ready first and "we haven't got our own backyard right yet". For 2001 the driving force is 'improved customer service' which encompasses the Internet.

The National Sales and Marketing Manager is the primary driver of the Internet/E-commerce initiative. The drive towards implementation is a clear business need as well as keeping up with technology. There is an attitude of "trial and error" and "experimentation". There is the added bonus of the parent company having set up an E-commerce Council specifically to drive the whole business in the same direction. This signifies the current strategic attitude towards e-commerce.

Company D has grown its number of PCs from a mere 4 in the whole company in 1997 to giving every salesperson a notebook. Every marketing person has a notebook, all administration staff have computers, virtually everybody got a computer unless they worked on the shop floor. In total, the company now has approximately 50 computers. They also have an ERP system, which has recently been implemented and also encouraged the implementation of email.

All staff with computers have an email connection however there are only 3 Internet connections in the whole company.

> *…The reason for that was because the traffic that was going on was horrendous. The highest traffic content was porn. This happened mostly after 4:30 and more towards the end of the week. All emails are scanned on the way in for the anti-discrimination policy. Software analyses this. This does not add value to our product but it stops people doing things that they shouldn't and that way everybody feels more comfortable. We pay for staff's Internet access at home (this is for everybody with a notebook). This allows them to do work from home if they want to. We are pretty liberal about where they get their work done. We don't check their home accounts and their email address is private.*

Email seems to be an integral part of the business.

> *With customer feedback for example, we have distributors around the countryside and if they have an issue with a product they can take a digital picture of it and we can work out what the problem is ...*

Future plans for expansion include upgrading to having groupware. Currently the company has a Corporate Homepage at the brochureware stage. There are plans for upgrading the Homepage and recently they surveyed their customers asking them how they would like to receive information.

> *…what we found is that 98% had CD players, 70% were connected to the web **only** for email.*

Their information packs are now in the form of a CD and they know their customers can make use of it. Company D's main concern with providing information on their Corporate Homepage is that:

> *…it can remove you one step from the process ...the customers are just going in, having a look and going away, they are not buying...the problem in this business is that people want a specific solution, so then they eventually need to ring us up and ask us "can you do .....?" and then we will have to go away and find out and then get them a price. It will take years before they will be able to cost it for themselves and the reason you don't want them to be able to cost it themselves is that you are giving away your competitive advantage. We could have it all online because we use a database here to prepare the quotes but then your competitors could come along and say "we can do it for $1.50 less". Systems like that de-emphsizes the customer supplier relationship.*

> *We are now spending a lot of money on identifying ourselves in particular market segments. Just going out and speaking to people, one thing we have found is, in particular market segments, what people do is gather information about products and competing products. What e-commerce does is, instead of them calling us up and requesting some literature to be sent out, what they do is gather it off the Internet and you will never know that there is a possibility of a project coming up, so you have actually pushed your customer away. They are happy because they have not had to talk to anybody."*

Buying and Selling Online is not a stage Company D see themselves getting into in the near future.

> *…Those customers who want a product, cut to a certain size etc, will never buy over the Internet. They come to you because they know you can do it and even the new customers, we know who they are, and the Australian Market is tiny, and they won't buy online…*

When planning a new direction for their e-business strategy Company D prefer to talk to their customers instead of hiring consultants.

> *What we have found is that we have gone to the big consulting firms and they tell us to get on to the Internet for certain reasons and those reasons don't actually line up with what our customers actually want when we talk to them. An example is that one consulting firm said that we should in get into B2B because you can get all the transactions done automatically, they can look at your stock and so nobody needs to talk to you and you can reduce your overall overhead. Our customers are not saying that, they are saying that the most we [the customers] want is to look at your stock and see where our order is in your production cycle, but we still want your sales guy to come out and we want them to be technically based, not only a salesman, they want them to be an engineer and they want the same person to help them redefine their business and rehone their business…We actually had an e-commerce consultant on the e-commerce council and subsequently they have been removed. They are actually driving people in the wrong direction. They were driving us in a direction that was good for them but not for anybody else."*

Implications of Model for Company D

(a) Level of Adoption

Company D is at the *Corporate Homepage* phase.

(b) Resistance

Buying and Selling Online is not a stage Company D see themselves getting into in the near future, their main concern being that it can remove them one step away from being in touch with your customer.

(c) What's Next

Future e-business plans for Company D include linking up their Customer Contact Database via an Intranet. This will take them to the *Corporate Intranet* phase.

> *…This software will eventually be on the Web through an Intranet. The benefit is that there won't be a lag because you will be online putting the data – no synchronising. This happens once a week at the moment. Therefore, you don't have to ring somebody and say; hey you didn't sync last week…*

A CONTINUUM OF MATURITY – NEW INSIGHTS FROM CASE STUDIES

Below new insights from the case studies have been included. The new insights from the case studies are in ***bold italics*** to clearly separate them from other changes.

	Focus	Motto	Mindset	Result	Critical success factor	*Resistance*
1. Computeris-ation	*Modernism*	*"Let's buy a computer"*	*A modern company*	*Computerised Accounting/ GST/**ERP***	*Computer literacy*	*1. No clear business need*
2. Getting Wired	*Connectedness*	*"Let's get wired"*	*A first step in the e-commerce direction*	*Extended/ Efficient communication capabilities Email/ Research/ Online banking*	*Internet/Email literacy*	*1. No clear business benefit* *2. Unjustifiable business cost* *3. Like things the way they are* *4. Customer base unlikely to get connected* *5. Preference for oral communication* ***6. Too slow for research*** ***7. Fear of staff misuse/loss of staff productivity with Internet access***
3. Corporate Homepage	Corporate PR	*"Let's have a homepage"*	*A modern dot.com company*	Brochureware	Content refreshment	*1. No clear business need* *2. Limited business benefit* *3. Lack of time* *4. Low priority* *5. Fear of too many*

	Focus	Motto	Mindset	Result	Critical success factor	*Resistance*
						'nuisance hits' *6. Limited or no technical knowledge* ***7. Overly focused on tangible benefits***
4. Corporate Intranet	Organisational glue	"We're building and intranet"	A front-end and-or communication channel	Groupware	Architecture design	
5. Buying or selling online	Online buying or selling	"Let's do business on the Web"	A channel for commerce	Early learning	Channel development	*In addition to the points in 'Corporate Home page':* *1. Fear and aversion to risk* *2. No immediate tangible business benefits* *3. Security concerns* *4. Inability to measure intangible benefits*
6. Adding key capabilities	Building e-process	"Let's do it properly"	A new business model	Capability building	Process re-engineering	*1. Unwillingness to change business model* ***2. Removes you one step from the customer*** ***3. Fear of competitors gaining advantage from publicly available knowledge*** ***4. E-business consultants are driving companies in a direction that benefit themselves***
7. Decision by wire	Business development and operation	"Let's behave like a dot.com"	A new management model	Decisions by wire	Information literacy	
8. Let's drop the "E"	Continuous reinvention	"It's not new anymore"	A dynamic model	Comfortable in the new economy	Continuous learning and change	

Figure 2: Moussi's Extended Adoption and Resistance Model

CONCLUSION

Although this model appears to be a step by step progression, the above case studies show us that a company rarely progresses in such an organised way. Some companies by-pass certain steps in the model. Contrary to previously assumed reasons such as lack of resources or awareness, for some companies this is a conscious and strategic choice. Although email is only the second stage of the e-business continuum it is still one of the most powerful tools in e-business and in some cases it has been the tool that has allowed major business transformation. There is no end to the extension and re-invention of such a model. With our business environment changing rapidly revision of such models becomes imperative if they are to remain useful to business.

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