PEOPLESOFT

The Dynamics of Digital Business

White Paper

Introduction

Businesses are waking up to the reality and challenges of the Internet and e-commerce, both business-to-business and business-to-consumer. But many, if not most, remain confused about what the new electronic, connected world really means for them. A lot of companies are simply playing “catch-up”, without really being aware of what it is they are trying to catch. There is also widespread complacency among senior managers about their companies’ ability to meet the challenges of electronic commerce and of operating in a connected world.

This white paper presents an analysis of current attitudes among top European companies, an outline of how the digital world involves a new economic model and therefore necessitates a new mind-set among managers, a picture of the main characteristics of truly digital businesses and, finally, an illustration of some of the steps that can be taken immediately to transform an old-style business into a digital business.

The problem: undigital thinking in a digital world

Digital business is more than just using the web, although it naturally includes making effective use of the web. Digital business is more than just another channel at the front-end, although it includes this. Digital business is not even a question of taking every aspect of a business and digitising it. Digital business goes much deeper and wider than that.

Too often, the tendency is to use digital processes merely to reproduce manual tasks, simply using the new technology to fix and automate old ways of doing things. Too often, corporate structures which are hierarchical and divisional have been reproduced in the IT field - a company may possess the data, but it is guarded in separate departmental silos, severely limiting the organisation’s ability to communicate with itself, let alone with others.

Market research carried out for PeopleSoft and IBM by TBC Research, based on interviews with 100 senior managers in Europe’s top 1,000 companies, shows an alarming degree of complacency.

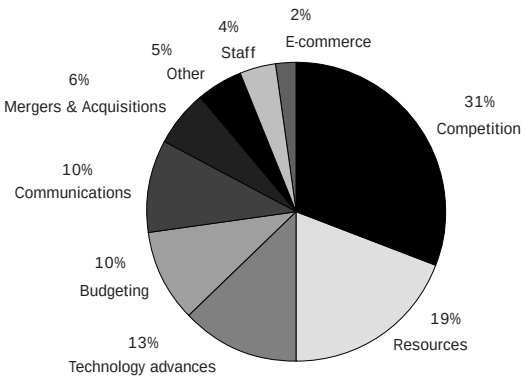
Only 13 per cent view e-business as a high priority, that is, aim to be at the forefront of technology. A greater proportion see e-business as a low priority, not a fundamental part of the business, while the majority see e-business as a medium priority, as something important but whose importance ranks behind other things.

When those who did not accord e-business high-priority status were asked why, only 5 per cent said that it was because they were not convinced that there would be a return on investment, while 90 per cent said it was because of a lack of budget which implies an e-business strategy is regarded by many as “nice to have” rather than a necessity. Yet nearly 50 per cent claimed their companies already possessed an e-business strategy and a further 20 per cent that their businesses were improving their strategy. In addition, 30 per cent were planning a strategy while only 3 per cent were not even thinking about it.

“Lack of budget” means not having the right priorities in place. And changing priorities is something that needs to come from the top. One problem indicated by the survey is that businesses consider that it is the budget setters who have overall responsibility for e-business. More than 90 per cent said that directors or high-level management set policy in this area with only around 4 per cent leaving it to the IT department or middle management. While this would be fine if the budget-setters had grasped the nature of e-business and understood what needs to be done, with the attitudes indicated elsewhere in the survey, the concentration of decision making at the top becomes an obstacle.

Perhaps the most worrying result was that when asked - without any kind of prompting - to identify the biggest challenge facing their organisations over the next 10 years, only 2 per cent cited e-commerce. As shown in the figure below there are a number of challenges that rate more highly than either advances in technology or e-commerce.

These results suggest a high degree of complacency among the top European companies. Not only do very few see e-business as their main challenge or a high priority but many appear to be happy with their perspective that they are about as good or better than their nearest competitors in preparing for the internet. Perhaps more worrying than the lack of priority given to e-business, is the belief among top managers that they are delivering the digital goods, when the reality is likely to be otherwise. For instance, the majority (60 per cent) say that their front-office systems are integrated with their back-office systems. Yet the reality is that such systems are only just coming on to the market. This suggests that the level of integration is generally poor, but managers believe that it is fine.



Key challenges to companies over the next 10 years

How is such complacency and lack of understanding to be challenged? In order to understand how a business needs to adapt to make itself fit to survive in the digital world, in order to see clearly what strategic and tactical changes managers need to make, it is necessary first to understand how the underlying dynamics of the digital economy are fundamentally different from those which have characterised the present industrial era. The change in economic model underpins not only how a business approaches its information-technology requirements, but also how it manages its relationships with its staff, its suppliers and its customers.

The Digital Economy

As we move from the old industrial age into the new information, or digital age, we find that there has been a fundamental shift in the way the economy works. The old economic model was based on scarcity - of having something and holding on to it. The new economic model is characterised by abundance and ubiquity. A symbol of the old model is gold. Gold's value depends on its scarcity. So if you have gold, you hoard it because to distribute it would undermine its value to you. In the digital era, however, the currency is information - and information is useless if hoarded. While ultimate value lies in the quality of the information, if you cannot distribute it, you have no means of realising its value. Instead of hoarding, you share. Instead of isolating the source of value, by keeping it locked up in bank vaults, you distribute it as efficiently as you can. The underlying principles of the digital economy are ubiquity, abundance and having a target market of one.

The key to realising value is connectivity. Everything has to talk to everything else. Not only internally - the full integration of front-end and back-end systems - but externally. A company with an esoteric management system that works internally but not outside the organisation will have to conform with the systems and standards used by others. Compatibility is compulsory and the world of digital business is one that is based on common, often open, standards. Many believe, for instance, that the emerging XML standard will do for data what TCP/IP did for the Internet.

Not only do we have a new economic model, but the change of model undermines traditional assumptions about managing business. To implement the changes demanded by the new model - that is, to transform an organisation into a genuine digital business - requires a fundamental change of mind-set, a deep shift in how the nature of business is viewed. Implementation requires different measures of performance, a different relationship between people and systems and different corporate structures - that is, a different relationship between managers and employees.

If the old model can be seen as relating to a kind of "gold" standard - where the world is characterised by scarcity and the aim of the game is to hoard and protect the gold - then the new model - characterised by flexibility, dynamism and based on sharing information within shifting communities - can be represented by a very different kind of metal: mercury. Unlike gold, mercury's nature is to flow and it is impossible to hold on to - indeed, given its toxicity, it would be dangerous to attempt this. Its archaic

name “quicksilver” also denotes something of the attitude of mind that managers will need in the digital era. If one looks at the mythological character of Mercury, he was the messenger of the gods, whose role was to deliver information quickly from whoever to whomever - as a result, his alliances shift depending on whose message he is delivering. But he never holds on to the information, never takes a position of fixity, never hoards. On top of that, Mercury was traditionally the god of commerce and, in Roman art, Mercury was portrayed not only with wings on his heels, but also with coins in his hand - and the modern businessman is going to need to be just as fleet of foot - and of mind - if he is to succeed in e-commerce.

By adapting to the new world and adopting a Mercury way of thinking, managers can put themselves in a position to succeed. But if they cling onto (g)old ways of thinking, they will be lost. Part of the problem is that, in this period of transition, old ways of thinking based on a scarcity-hoarding mentality continue to be applied in a world in which they are, at best, irrelevant and, at worst, dangerous. The new economic model necessitates the transformation of corporate structures, of the way organisations handle information, and of the way managers and employees relate to each other and to technology.

Part of the present problem is that technology is used merely to reproduce human processes, while the humans are forced to run and think faster and faster in order to service the technology. In a paradoxical way, one ends up with computers failing to deliver their potential because they are limited to replicating old-style processes formerly done by humans, while the people fail to deliver their potential because they are treated as part of the process and forced to handle information in a way which, while facile to a silicon-based computer, is not what carbon-based life forms were designed for. The consequences of this are the frequent reports of staff suffering from “information overload” and “hurry sickness” - factors which will, in time, undermine an organisation’s effectiveness and ability to compete. This is not a situation that can be allowed to continue - it is hardly healthy that key decisions within an organisation are taken by people who are more and more stressed. A worker in a digital business needs to be enabled to move from a condition of information overload to being, like Mercury himself - an information overlord.

A genuinely digital business is one in which the technology and the human resources are enabled to perform what they each do best. Once integration of data systems has taken place and the process maps have been redrawn along different lines, the employee’s role does not disappear - it becomes more crucial than ever. The fact that the digital economy is driven by different factors from the earlier industrial economy - information and knowledge - means that the role of people within businesses is necessarily different. People are a key asset and their intellectual capital is precious. The aim of the game should not be merely replacing human resources with technological ones. The digital economy is not so much about finding new things to automate as about changing the nature and focus of applications. When content and information are put together and modelled in new ways, they can be delivered in a manner that supports the people involved in the company, rather than views them as merely part of the process.

When the digital economy is properly understood, it becomes clear that the hierarchies of the hoarding mentality, where information is guarded at every point up and down a corporate structure and disclosed on a “need to know” basis, have to be overthrown. A digital business is one in which the characteristics of the digital economy - ubiquity, abundance and having a target market of one -are applied internally to the e-workplace. Employees will be empowered to make decisions rather than having to refer up the old hierarchical ladder of command. In order to be effective, a business will need to allow the free flow of information among its employees rather than allow managers to guard it and try to use it manipulatively, trying to play the puppeteer.

This is a big challenge for management. In the past, managers have often tended to hide behind systems and procedures and have not always needed to explain their decisions. But, increasingly, people will have more information and everybody will be able to form a view of performance - including the performance of managers. This greater transparency within a digital business means a shift away from the old master/servant model that characterised the relationship between management and employees. This involves flexibility on both side - management has to share

information and decision-making, but employees are no longer expecting “jobs for life” and for the company to look after them. Indeed, in this era of flexible working, staff retention may be a key problem for management.

Being digital takes a lot of the friction out of the business. In an old-style system, the more transactions that go through, the greater the costs associated with those transactions. But the digital economy is different. You can reach the point where the cost is the same whether you want to process a thousand transactions or a million.

Under the old model, different parts of the supply chain would compensate for lack of information by holding stock - another example of the hoarding mentality appropriate under the economics of scarcity. But holding/hoarding stock creates unnecessary costs and, when the information flow is efficient, the need to hold on to stock is removed. You have the information of who is buying from you, when they buy, what they buy and so on. You don’t need to hold on to stock, the “evils of inventory” as Bill Gates calls it[1]. The more a company can reduce its inventory, the more it frees up working capital for other revenue-generating activities. In a digital business, inventory is replaced with information. As Michael Dell, founder of the computer company, puts it: “Physical assets used to be a defining advantage. Now they’re a liability. The closer you get to perfect information about demand, the closer you can get to zero inventory. It’s a simple formula. More inventory means you have less information, and more information means you have less inventory. We’re trading physical assets for information.”[2]

What a digital business looks like

As we have seen, being digital involves a fundamental shift in the underlying economic model which necessitates many changes of attitude and structure within an organisation. On another level, digitisation changes the economics of a business in a more immediately tangible way - it can transform the cost base. Companies that have taken digital on board and are digitising their operations have found that the savings can be of an order far greater than they might have anticipated. Take procurement, for instance. When a company moves from traditional procedures for procuring equipment - procedures which are very people-based, paper-based, time-consuming and expensive - to electronic procurement, they encounter savings not of the order of 20 to 30 per cent which they might have expected, but savings as high as 90 per cent.

As the TBC research illustrated, managers see competition rather than being digital as the biggest issue they face. But which is going to have more impact on a company - a new product which adds 10 or 20 per cent to revenues, or a new digital procedure like e-procurement which is going to knock 90 per cent off the cost base? Savings of that order fundamentally transform the landscape.

There are three fundamental characteristics of a digital business, a business that has genuinely embraced digital technology and its wider implications:

(1) Electronic support for all processes to ensure the full flowing of information;
(2) Intelligent analysis to exploit the store of digital information;
(3) Integrated performance management to measure the effectiveness of the business.

All the processes of a business need to be integrated into the digital model. Being a digital business is not just about having a web-site and an electronic front, as the TBC research clearly indicated, a high degree of internet awareness already exists across Europe with the majority of respondents regarding their own web-site and the Internet in general as important. In fact 90 per cent of respondents saw the Internet as either “fairly important” (26 per cent) or “very important” (64 per cent), although interestingly only 10 per cent regarded it as “crucial” to their companies.

However, when delving a little deeper into the ways in which people were using their web-sites, it became apparent that the majority saw it as an image-building tool and almost nobody had increased their sales via their web-site.

So whilst businesses across Europe appear to have grasped a certain amount of "internet value" they appear to be missing the bigger picture. There needs to be electronic support for both internal and external processes - processes involving customers, suppliers, partners and employees. A digital business is part of a connected world, a world in which its ability to compete depends on its ability to connect with its customers. An organisation's ability to perform via its external connections, to both customers and suppliers, will be affected by its ability to connect its own departments. Systems integration - most crucially in linking the customer-facing front-end operations with the back-office finance and accounting procedures - is more than merely desirable, it is fundamental to a digital business.

With such systems in place, the next stage is in making full use of all the data that a business is creating. At present, companies often have difficulty in making effective use of the data they amass from transactional business alone. But they will need to be able, not only to analyse this data effectively, but apply effective analytics to other aspects of the business.

Enterprise resource planning (ERP) systems are able to process large numbers of transactions and provide summary information to management. Such systems also provide limited tools for target setting and measuring how well these are being met and some may have some analytic capabilities for looking at long-term "what-if" scenarios - although these functions tend to be limited and rather crude. But in most cases, such systems cannot manage the point where the different functions meet - for example, in providing intelligent management of the order-taking process and facilitating the relationships of the people involved in that process.

It is not enough to be able to know how many items were sold in one sales outlet on a certain day. It is necessary to know more than the simple transactional information and to know for instance how many items could have been sold but were not, the reasons why they were bought and what future demand is likely to be. To know that three black cars were sold by your outlet in a particular town tells you something. But on its own, it does not tell you if three black cars were sold because no one wanted yellow or red cars or because black was the only colour available on that day.
The challenge facing the would-be digital business is in taking the vast amount of data generated by its electronic processes - which are all connected, all talking the same language - and applying analytics that go deeper and wider than in the past.

The third factor that characterises a digital business is the putting in place of performance-management processes that are an integrated part of the business, connected to the other systems of the organisation. In this way, performance management -in terms of process benchmarks, shareholder value, employee monitoring, soft targets and true integrated supply-chain performance management - benefits from the full flow of information through the company's systems.

Performance management tools - such as Stern Stewart's EVA (Economic Value Added) and Kaplan and Norton's Balanced Scorecard - have become increasingly popular. But often these applications are run as stand-alone systems, independent of a company's transactional and other systems. In other words, the full information and analytics that are really needed to do the job properly are not there.

Balanced Scorecard, which first appeared in the Harvard Business Review in 1990, is based on the view that a company's performance must be measured in terms of all its stakeholders, shareholders, partners, employees, customers, suppliers and the wider community. The approach uses data from across the organisation to reach conclusions on what measures are most appropriate for meeting the needs of each area. Often, the scorecard is used as the basis for developing key performance indicators (KPIs) to monitor progress. EVA emphasises promoting shareholder value by the intensive scrutiny of how the capital of a company is performing and thus measuring whether the employees are doing the things that enhance shareholder value. Under this model, the cost of capital has to take account of the risk attached to the investment. While it can be seen as too narrow in its focus, EVA is widely viewed as providing an effective snapshot of how a company is performing and the model is flexible enough to be adjusted to suit individual company needs.

Almost all of the companies surveyed in the TBC research undertook regular management reporting and a fairly high proportion (64 per cent) used activity-based management systems. However only 2 per cent of respondents claimed to use a Balanced Scorecard approach and 1 per cent EVA. This despite the fact that 83 per cent of our sample claimed that “business analysis was carried out at many levels and feeds directly into management strategy”. The logical conclusion from these responses is that companies are analysing their businesses, but perhaps not always with the most advanced tools available.

Each of the systems outlined above, in their own way, offer companies valid means of measuring and managing the performance of a business. But their power could be enhanced to an incredible degree if they were connected up to the organisation's other systems. Then, instead of providing a stand-alone snapshot, performance management would be an in-built part of the business, connected to the core systems and the analytics.

On top of the three key elements of a digital business, there is a fourth element. The three fundamentals do not exist on their own: they are mutually supportive and, as a result, the sum is considerably greater than the parts. But it is more than this. What will make a digital business fundamentally different from a standard 20th century business is the dynamic interplay that takes place between the three elements. Each of them will transform and be transformed by the others. This is possible because all the interchanges taking place are taking place within a digital environment. If a company has adopted the connectivity, transparency and openness that characterise a digital business - that is, if the three fundamental elements are individually in place and connected to each other - it will be able to reap many rewards. In fact, rather than speak of this as the fourth element of digital business, it may be better to view it as a new dimension arising from the interplay of the three fundamental elements.

Just as a company, going digital, learns to communicate internally in a more flexible and dynamic way, so too its external communications change. Just as the relationship between managers and employees undergoes a radical shift towards flexibility - undermining old assumptions and ways of doing things - so too does a company's relationships with its suppliers and partners.

In a digital world, business relationships - like everything else - will be fluid and a company will find itself involved in a pattern of dynamically shifting “communities” in its relationships with partners and suppliers. Long-term alliances may still exist, but only because short-term needs evolve in a way that keeps companies linked to each other.

At present, we are witnessing the formation of a new kind of alliance between software companies and the big telecommunications operators. Consulting is also coming into this frame - after all, someone has to set up the systems. But the alliances of tomorrow may be very different. Consider how, at the beginning of 1999 Microsoft decided to ally itself with broadband cable by taking stakes in several European cable companies. A few months later, and Microsoft is forming an alliance with BT, the most powerful competitor faced by the very UK cable companies in which it has so recently taken a stake.

A successful digital business is one that is able to master this new dynamic and one that is able to juggle relationships that may seem to be in conflict with each other.

Applying the digital business model to existing businesses

The TBC research illustrated the fact that companies do not appear to have fully grasped either the cost-saving or revenue-generating opportunities offered by e-business. When asked to name "the single biggest influence driving their companies towards e-business", only 12 per cent suggested reduced costs and 3 per cent increased revenues. The vast majority (80 per cent) cited improved customer/supplier relationships as the major influence, again implying that e-business is an enhancement for companies rather than an economic necessity.

However, for companies looking to start the transformation into a genuine digital business there are opportunities to implement technologies today which can reduce operating costs, generate incremental revenue and provide smarter analytical information across the entire enterprise.

For example, a move to e-procurement can have a major impact on a company's cost base, producing savings of as much as 90 per cent. Three of the top corporations in the USA - GE, Boeing and Compaq - say that moving to e-procurement has led to each of them saving at least $800 million a year. On top of that, GE has found that it can sell its e-procurement model to other companies - thereby creating a whole new business and revenue stream out of something which has just cut its cost base considerably.

Forrester Research expects goods and services purchased by business over the internet to pass $1.5 trillion by 2003. That is about the scale of the French economy today. So what we are talking about is of the order of a new G7 country being added to the world economy.

According to a report from the Aberdeen Group[3], automated procurement for indirect goods and services can lead to substantial economic benefits for any organisation:

- Companies implementing electronic procurement solutions can achieve a reduction of up to 10 per cent in pricing through greater control of maverick purchasing, increased use of preferred suppliers and improved leverage for contract negotiations.
- Internet procurement automation can cut requisition-processing costs by 70 per cent per order. On average it costs $30 to process and order through an electronic procurement system, compared with $107 for orders processed manually.
- Electronic procurement also delivers a time saving, with a reduction of between 50 per cent and 70 per cent in the time needed to complete the purchase requisition cycle - from order initialisation to fulfilment.

A comprehensive solution, such as PeopleSoft eProcurement, enables businesses to empower their employees to requisition goods and services from their desktops, leading to savings in the overall cost of purchasing of 10% to 15%. This reduces the workload placed on the purchasing department involved in processing purchasing requisitions and purchase orders. PeopleSoft eProcurement also provides a single point of entry into an organisation's e-commerce services, which enables the business to control and leverage the buying behaviour of its employees.

BT expects to reach a target of 95 per cent of its indirect procurement via e-business by March 2000, having implemented an e-procurement strategy at the beginning of 1999. The company had a wide range of legacy systems in different departments and needed a solution that would interface with all those systems. As one might expect, it has been attaining integration with these legacy systems that has been the main difficulty in implementing an e-procurement strategy. But for a company such as BT, with 60,000 internal employees, the cost and time savings should have a significant impact.

The essential message of e-procurement is that a company should rip out the paper and the people and let the machines do the job. Meanwhile, the people can be re-deployed to do more intelligent things.

On the revenue generating side, there are numerous opportunities for companies to deploy e-business technologies to exploit new markets or increase existing customer revenues. To use an example, PeopleSoft's eStore application allows companies to create an electronic store front to sell goods over the internet direct to other businesses or consumers with whom they may have had little or no previous contact. PeopleSoft eStore combines sophisticated closed-loop analytics with the ability to be linked into companies existing back office applications. The result – an integrated eCommerce solution which provides a fully personalised experience for the end customer and maximises revenue and profitability for the seller.

Building in closed-loop analytic functionality into specific applications is one way in

which companies can improve their ability to analyse information. However, most companies are a long way from utilising effectively the information they have already, let alone from realising its true potential.

To take an example. A major supermarket retailer launches an online home-shopping service. To use this service, a customer has first to complete a detailed "shopping list", selecting from a seemingly endless menu, the names of the products which he or she is likely to buy. While shopping online may save a consumer a lot of time, it can easily take two hours just to complete this initial process which thus forms a not insignificant barrier to entry into online grocery shopping. A customer might protest that for the last two or three years he or she has been shopping regularly at this supermarket chain and has been a member of its loyalty-card scheme. "You already have the information you need", the customer might reasonably declare. But the response is likely to be that the loyalty-card scheme is "another department" and so the shopping list must be completed.

Disparate systems within an organisation need to be connected so the vast store of information that the organisation has within it can be harnessed into working for its overall benefit by the application of intelligent analytics. This is not an area where a company can afford to waste time. Today PeopleSoft provides business intelligence tools which allow companies to measure and manage performance and profitability in a wide range of ways, then distribute the results in comprehensible, useable format. The suite of Enterprise Performance Management applications allows managers to plan, simulate responses to challenges and opportunities based on activities, current business processes, product mix and customer portfolio.

Summary and Conclusion

The results of the research into digital business in Europe demonstrate conclusively that there is widespread complacency about e-business among top managers and the full implications of going digital are rarely understood. Too few European companies see e-commerce as their main priority and more resources - both in terms of management time and investment - need to be deployed.

A digital business is very different from a traditional business because the economics of the information age are very different from those of the earlier industrial age. A model based on scarcity, where hoarding is the means to success, has been replaced by one characterised by abundance, where ubiquity and distribution of information are essential. The change in the economic model necessitates a change in management mind-set and in corporate structures if a company is to succeed in the new dynamic and flexible environment.

A digital business is characterised by three key factors - electronic support for all its processes, intelligent analytics of its store of digital data, and performance management that is fully integrated with its electronic systems. The dynamic interplay between these three, mutually enriching elements, takes business into a new dimension.

Companies can start moving towards becoming real digital businesses by an early adoption of electronic procurement and intelligent analytics.

A drive from the top is essential. Managers need to look at their businesses and say: "I want a new-style, genuinely digital business and I will devote all that it takes to make it happen". And then they need to make it happen. Because if they do not, they may end up moving from managing an undigital business to wondering whether they have a business left to manage.

[1] Bill Gates, *Business @ The Speed Of Thought*: Warner Books,1999; p100
[2] Quoted in Gates, *Business @ The Speed Of Thought*: Warner Books,1999; p100
[3] *Internet Procurement Automation Looks Like a Winner*, Aberdeen Group; Volume 12; Feb. 1 1999.

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