E-Business B2B For Success



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Much of our success over the years has been built on the success of our clients in the Engineering Sector in the industrial heartlands of Britain. As they have grown (often against the trend), nationally and internationally, so too have we - so as to provide them with the enhanced levels of service required.

We have now brought together that experience in our Engineering Group which is a multi-disciplinary team of specialists having specific expertise and interests in this sector. We are the only UK law firm to be affiliated to the Engineering Council.

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Executive Summary
E-Business - B2B for Success

A study tour, led by the Engineering Council, Industry Affiliate Network, with the support of the Department of Trade and Industry, International Technology Service, took place during August 2000.

Objectives

- to increase the relevance, quality and flow of information into UK companies regarding the successful exploitation of e-business;
- to promote greater awareness among senior representatives of industry of advances taking place in the US through direct contact with key organisations and people who are successfully exploiting e-business;
- to disseminate this information widely in the UK.

What Is E-Business?

E-Business can be defined as business facilitated by the exchange of information across electronic networks. For the purposes of the study and this report we have selected the transactional definition with a focus on the marketing, buying and selling of goods and services from businesses to businesses (b2b) rather than on business to consumer transactions (b2c).

Is it Happening Now?

Andersen Consulting calculates that in the past 5 years Internet use has grown from 3 million users, mainly based in the United States to more than 100 million, now worldwide. Online trading (b2b plus b2c) is currently valued at about £6.5bn - projected to grow to over £250 bn within four years.

Why Is E-Business So Topical ?

Survival, profitability and opportunities for future cost savings and growth -e-business is expected to bring far-reaching change to the ways business is undertaken. From what we saw in the United States, e-commerce is set to revolutionise supply chains as online market makers begin to demonstrate savings arising from using the Internet to make purchases.

Why Adopt E-Business

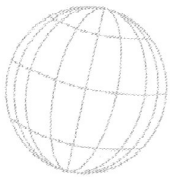
Trading on the Internet promises greater market penetration, increased responsiveness to customers, more flexibility and lower costs. From the point of view of a customer with significant purchasing power this is indeed an attractive prospect. From the perspective of a supplier two or three levels removed from end customers and the promise of e-commerce can look like both an opportunity and a threat. From our experiences in the United States it appears that the biggest threat of e-business will be that arising from inaction (getting left behind) when given the opportunity to take part in what may become a key e-market place for a relevant industry sector.

Key Findings

- All US organisations visited had recognised the strategic significance of the effective and timely adoption of internet technologies to communicate with customers, with suppliers and internally to co-ordinate operations.

- UK companies which have not yet asked their customers how they wish to be communicated with electronically, should do so as the first step towards developing a meaningful e-business relationship.

- Many of those who best understand the speed and impact of e-business are young. Many of those who make the strategic decision to invest in exploiting e-business are experienced and probably not so young. This is one issue on which the experienced could benefit from being mentored by the young.



- The promise of savings is prompting companies in the real economy to invest heavily in e-Business. Like it or not, e-marketplaces are being built which will in the medium term handle most of the b2b transactions in many industry sectors. At the last count over 700 e-marketplaces had launched to serve industries in the US and UK.

- It is better to take the risk and invest in transacting either directly with customers or through e-marketplaces, than not to take the risk and exclude any chance of b2b success.

- Current best practice in systems engineering applies to e-business:
  - obtain top level commitment
  - ask your customers and suppliers what their needs are;
  - develop a clear statement of requirements;
  - use standard software components where possible;
  - test before launch
  - launch the solution with serious intent communicated from the very top
  - then obtain feedback and strive to use this positively to improve the solution.

- Engineers with change management skills are well placed to manage programmes to develop and implement e-business systems.

- UK businesses would do well to accept as the Americans do that change is the only constant in modern business. Then embrace this "change culture" with the enthusiasm and vigour of US businesses.

- The distinction 'new' and 'old' is artificial as there are many established companies being transformed by internet technologies. Conversely there are some newer companies whose business models, beyond raising venture finance, may turn out to be as virtual as the emperor's new clothes.

- The US may be about 18 months ahead on the hype of what will be possible, but only 6 months ahead on extracting business benefits.

- There is more disparity between industry sectors within the UK than there is between the countries. Although UK companies are only beginning to adapt to the internet age no-one should assume that the race to succeed at b2b has already been won by someone else.

- Whilst uptake of e-business offers many benefits it also entails significant challenges. Many of these challenges are a mixture of technological, cultural and legal issues. None of these should be viewed in isolation and all should be seen in the context of the business which they are designed to serve. Serving that business and its customers should remain the key objective which should not be lost sight of.

Clive Coker CEng
Senior Executive - Industry Engineering Council



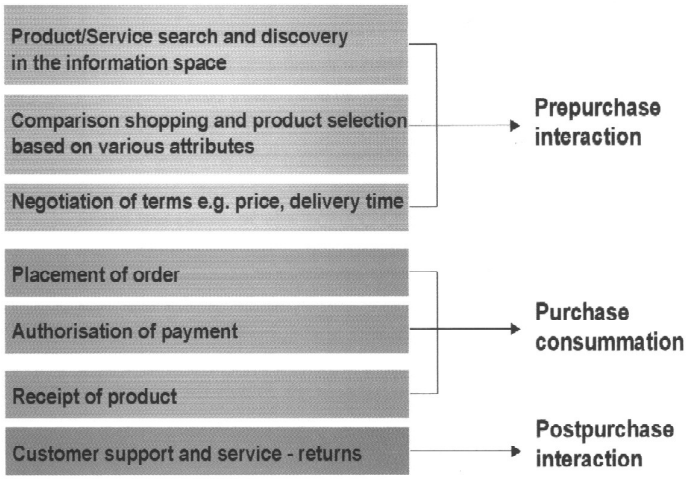
1. The Promise of E-Business

Dr Elizabeth Daniel Senior Research Fellow, Information Systems Research Centre, Cranfield School of Management

Elizabeth Daniel specialises in the research and teaching of e-business and is currently leading a research programme to help a consortium of companies to develop an effective e-business strategy.

E-business is still relatively young, with the internet only being used commercially to any significant extent in the early 1990s. However, e-business has certainly caught the imagination of both entrepreneurs and those in well established businesses, to an extent that can no longer be considered as a passing fad or as only hype. The reason e-business has generated such interest is that it can offer benefits to all areas of a company's operations and also allows these benefits to be gained at lower cost. The benefits offered by e-business can allow companies to significantly improve their current operations or even to develop whole new business models.

Figure 1: On-line Activities in the Buying Process



Source: Electronic Commerce. A Manager's Guide. R Kalakota & A Whinston

A Dialogue with Customers

E-business offers companies the opportunity to find new customers and deepen their relationship with existing customers. However in order to do this companies should recognise that e-business does not simply mean taking orders for goods and receiving payment on-line. Figure 1 shows that the buying process that customers go through, be they consumers or other businesses, has a number of stages and all are equally important, and all can benefit from the use of e-business. By interacting with customers at each of these stages and responding to their needs, companies can undertake a true dialogue with customers that can extend over the entire customer lifetime.

Ford Motor Company has recognised that there are a number of stages in the customer buying process and is developing on-line services that address each of these stages. In May 2000, Ford Canada was the first part of the business to trial an on-line build to order system, called BuyerConnection, shown in Figure 2. In this test, consumers in two Canadian communities were the first to be able to complete a new vehicle purchase entirely on-line. Consumers could custom configure a car specification to meet their own needs or preferences on-line, obtain a price quotation, find out if a car to the desired specification is already available at various dealer, being shipped from a plant or on the assembly line and secure the purchase with a deposit paid by credit card. If the car was not already available, their order could be placed directly into the Ford production system, and its status tracked 24 hours a day until delivered to the dealer.

BuyerConnection ensures that customers get exactly the car that they want and that Ford is producing just these cars. Currently, in the US approximately 80% of cars are bought 'off the lot', that is the customer settles for a car that is available, rather than being able to specify the exact car they require. In such cases, the car producer, in this case Ford gains no information about the car the customer did want. BuyerConnect represents a 'customer-pull' model of production, in which customer need drives production, rather than more traditional 'manufacturer-push' models, where production is driven by manufacturer's estimates and forecasts.

The intention is to roll the BuyerConnection service out to more locations, following its successful trial. However, the car retailing market, like many markets has specific legal restrictions and in certain US states it is not possible to sell cars directly to the public. As will be discussed later in this report, local laws and regulations may restrict companies from offering identical services to customers in all locations.

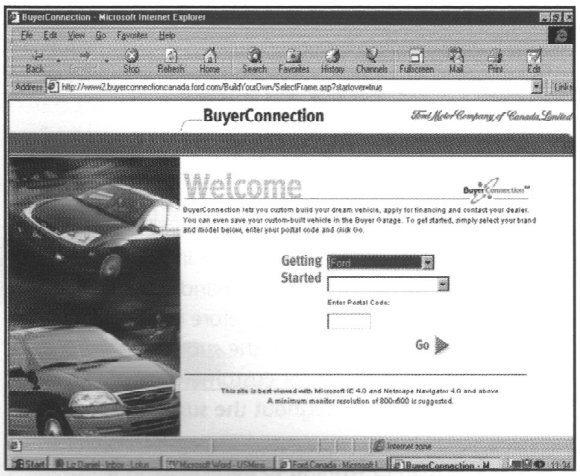
Ford have also recognised that e-business can be used to continue a relationship with customers after they have made a purchase. They have developed a series of ownership services, entitled My Ford, that ensure customers remain satisfied with their car and therefore loyal to the Ford brand.

Improved Supplier Relations

In addition to improving customer relationships, e-business allows companies to improve their relationship with their suppliers or other business partners. Currently the majority of purchasing between companies is undertaken via paper based systems. These are slow and expensive, with the cost of processing a single purchase order in many companies being around £70. Some industries have adopted electronic data interchange (EDI) but such systems tend to be expensive and therefore preclude all but the largest businesses from adopting them.

In addition to the inherent expense, traditional purchasing operations tend to be driven by

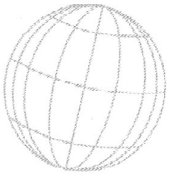
Figure 2: Ford's BuyerConnect



manufacturers' forecasts rather than true customer demand. The delays in paper based ordering systems mean that companies tend to hold buffer stocks to ensure they do not run out of materials, disguising true demand even further.

E-business can offer benefits to the supply chain by reducing the cost of transactions and also allow demand or sales data to be shared quickly and cheaply by all members of the supply chain. The challenge for companies wanting to exploit e-business in their supply chain is not implementation of new technology, but a willingness to share information with suppliers. Many companies talk about improved supplier relationships, but are reluctant to share demand information with their suppliers in case this weakens their stance in price negotiations.

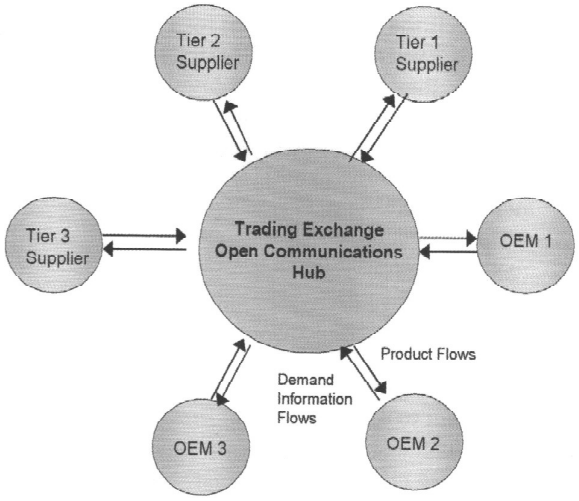
Many vertical industry sectors are currently seeing the establishment of electronic commerce trading exchanges or marketplaces. Examples include the alliance of Ford, Daimler Chrysler, Nissan and Renault to form the automotive electronic exchange, Covisint and the alliance of Boeing, Honeywell, Pratt & Whitney and Northrop Grumman to form the aerospace exchange, PartsBase.com. Currently the emphasis of such exchanges is in the procurement of goods, promising buyers the opportunity to source goods at low prices and suppliers the opportunity to more easily find new customers.



However CommerceOne, the leading supplier of software for such marketplaces, believes that their impact could be much more significant. They could offer the opportunity to remodel entire supply chains. Currently supply chains are based upon a sequential, linear model of information and parts flow, with each tier only communicating with the next level in the chain. E-marketplaces, with their open communication approach, could be used to connect buyers with all tiers of suppliers in their supply chain in a single integrated hub, as shown in Figure 3. Demand information from an OEM could therefore be accessed instantly by all tiers of the supply chain allowing dynamic or customer-pull production throughout the supply chain.

Companies wishing to participate in a trading exchange require only an internet enabled PC and a standard browser. This enables all sizes of companies to enter into such communities, including tier 2 and 3 suppliers which may well be small or medium sized companies.

Figure 3: Integrated Multi-Tier Supplier Hub



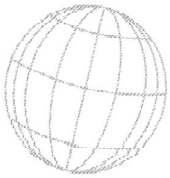
New Business Models

In addition to improving existing operations, e-business allows companies to do things that were not previously possible. The recognition of this has led to the formation of types of businesses, or business models, unique to the internet. One example of this is the UK's LastMinute.com which sells goods and services, as their name suggests, at the last minute, such as theatre tickets just before the curtain goes up or tables in popular restaurants just before the reservation time. The internet allows LastMinute to publish the information on these offers quickly and cheaply, and is also a means by which that information can by accessed by a large and varied audience. This business relies entirely on the unique features of the internet, that is the ability to publish information quickly and cheaply to a large, even world wide audience. It would not be possible to run such a business by traditional means, the products and services offered would have perished before a paper listing could be printed and distributed.

The internet is also giving rise to other types of business model, which if not completely unique to the internet, are certainly much enhanced by it. An example is the rise in popularity of auctions, since many buyers and sellers can be simply and effectively brought together. The US on-line auction company eBay, where individuals and companies can auction or bid for almost every item imaginable, has a fanatical following. Well established companies such as Lufthansa are also making use of auctions to sell excess capacity and also to generate interest and visits to its web site.

Cost Savings

Use of e-business not only offers improved customer and supplier relations - it can also be a source of cost savings for businesses - a real win-win! If the product or service being sold can be digitised, such as music, software, news or most financial services, the internet also provides a route by which it can be distributed to customers. This adds to the customer convenience, since they can receive the product immediately, with no need to wait two to three days for delivery on paper or on a CD. It also offers significant benefit to the company, since such distribution will provide considerable cost savings. The potential cost savings in three industries, are shown in Figure 4. When these savings are summed over the millions of transactions such businesses undertake each year, it can be seen that significant savings can be made, whilst actually improving the service offered to customers.



The Transparent Organisation

Many businesses developing and operating e-business services wish to reap the win-win aspect of electronic commerce described above. They wish to utilise e-business to serve their customers better, be they consumers or other organisations, and make operational cost savings at the same time. The more information that can be provided to the customer by the service and the more the customer can use this information to serve themselves, the more cost savings are likely to be realised. For this reason, many organisations are allowing customers to reach or see into their internal operations in order to serve themselves. This is achieved by integrating their e-business services with their existing internal IT systems effectively rendering their organisation transparent to the outside world!

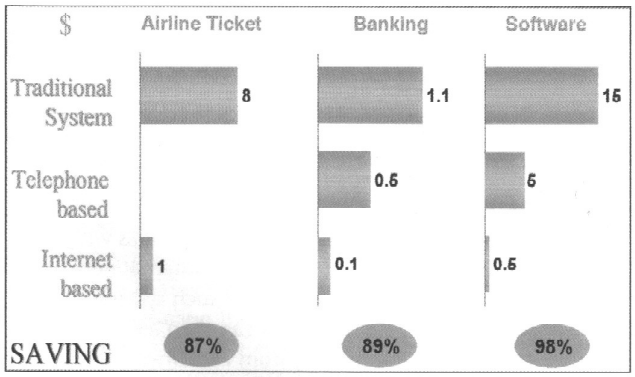
A good example of such systems are the parcel carriers such as FedEx and UPS that allow customer to track where their parcel is on-line. A service offered by BT allows customers to check their telephone bill on-line and also, if they have reported a fault on a telephone line, they can check how the work on repairing that fault is going. This latter service requires BT's road-side engineers to enter progress reports into hand held terminals and down-load this information to their internal IT systems. This information can then be accessed via BT's web site by its customers. With such systems the internal workings of the company are truly visible to the customer, in this case, right down the daily workings of the roadside engineers.

Dis-intermediation and Re-intermediation

If manufacturers can quickly and relatively cheaply promote and sell their products and services over the internet directly to the end users of those goods, then the role of intermediaries such as brokers, traditional distributors and even retailers becomes unclear and such businesses may not survive. This removal of stages in the supply or value chain is termed dis-intermediation.

However, despite the fact that current intermediaries appear to be under threat, there is a clear rise in new types of intermediaries in the on-line world, a phenomenon termed, re-intermediation. The future may give rise to a whole new type of intermediary, one that acts on a customer's behalf to search for information about products of interest and to filter incoming offers from companies. An important feature of such new intermediaries or agents will be trust, since a customer would wish to be certain that the products found and recommended were indeed the most suitable for their needs and not those most heavily promoted by the suppliers.

Figure 4: Transaction Cost Savings
Source: BT, OECD



Internal Knowledge Sharing

E-business also encompasses the use of computer networks, such as corporate intranets, to allow staff within business to communicate with each other and share information and knowledge. Bill Gates, the founder of Microsoft, has encouraged companies to think of such networks as the 'digital nervous system' of an organisation that allows information to flow throughout the organisation to wherever it is needed. Such systems, integrated across the entire firm, can allow staff to access up to the minute information and analyse it for patterns and trends that can then be acted upon, for example by developing new products to meet a new customer needs.

A good example of the use of such an internal network for information sharing is the intranet being developed by Lucent Technologies for its sales staff. The sales staff found that they were spending longer accessing information from various disparate systems in the organisation than actually spending time with customers.



The organisation is therefore in the process of developing an intranet based system, where the sales staff can access all the information they require, quickly and simply, from just one location. The system is accessed via the myLucent portal, which the staff member can customise to their own work patterns and preferences.

A Staged Approach

As businesses develop electronic links with their customers and suppliers and internal networks, their aim should be to join such systems together. Such systems can then allow information to flow, from customers throughout the business and into the supply chain, ensuring that customer demands are met rapidly and accurately and that the production of the company and its suppliers is linked directly to these demands.

Figure 5: Stages of E-Business Adoption.

However, achieving such an integrated flow of information requires major changes to a company's systems, processes and very importantly, it often requires major changes to the culture of the firm. Achieving this in one step is too much for most businesses, and hence most have adopted a staged approach to their e-business adoption and deployment. Figure 5 shows three stages adoption, in which an organisation moves from experimenting with isolated e-business applications within functional departments to being fully integrated with both customers and suppliers. As can be seen from the table, payoffs from the experimental stage of adoption are often unclear, but this stage is vitally necessary for a company to succeed at the later stages where major payoffs in improved customer satisfaction and increased revenues can be gained.

	Level I	Level II	Level III
	Experimentation	**Integration**	**Transformation**
E-Business Strategy	No EB strategy	EB strategy supports current (as is) business strategy	EB strategy supports breakout (to be) business strategy
Business Strategy	EB not linked to business strategy	EB strategy subservient to business strategy	EB is a driver of business strategy
Scope	Departmental/functional orientation	Cross-functional participation	Cross enterprise involvement Interconnected EB customers, suppliers and consumers
Payoffs	Unclear	Cost reduction, business support and enhancement of existing business processes	Revenue enhancement, increased customer satisfaction, drastic improvement in customer service
Levers	Technological infrastructure and software applications	Business processes	People, intellectual capital and relationships
Role of Information	Secondary to technology	Supports process efficiency and effEBtiveness	Information asymmetries used to create business opportunities

Source: W. Kettinger & G Hackbarth, University of South Carolina



2. The UK and US Compared

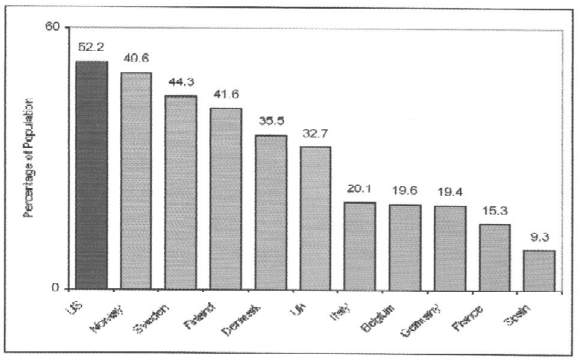
Dr Elizabeth Daniel Senior Research Fellow, Information Systems Research Centre, Cranfield School of Management

It is often said that the UK and other parts of Europe lag behind the US in the adoption and use of e-business. Although this is a well accepted view, it is difficult to quantify. However, some insight can be gained by exploring the demand for e-business services from consumers and the provision or supply of e-business services by companies.

E-Business Demand - Consumers Connected

Figure 1 shows the number of consumers connected to the internet in the US and in various European countries, expressed as a percentage of the population. It can be seen that the US has the highest penetration of consumers connected, with just over 50% of the population able to access the internet. Penetration rates in Europe are led by the Scandinavian countries which have rates very similar to the US. The UK leads use amongst the remaining European countries, well ahead of countries such as Italy, Germany and France.

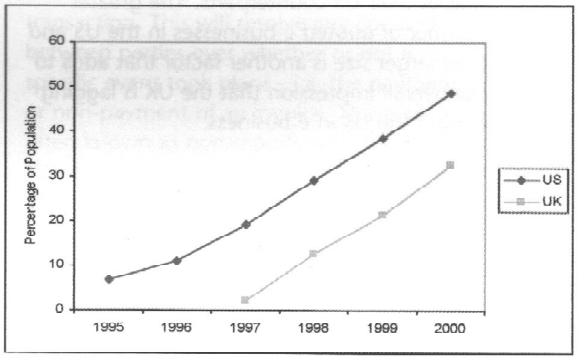
Figure 1: Consumers Connected to the Internet



The rate of connection to the internet by consumers in the UK and US is shown in Figure 2. It can be seen that uptake is occurring at very roughly the same rate, at around 10% of the population per annum. Based on this figure it would appear that it will take approximately 2 years for the UK to see the 50% penetration rate currently seen in the US.

The rapid growth in uptake currently witnessed, particularly in the US, is likely to slow down as those interested in the internet get on-line, leaving those resistant to such new technology to adopt it more slowly. Marketing theory would suggest that the uptake curves of new products tend to flatten out once those that see the most advantage in the new product have bought them, leaving new sales to occur at a much slower rate.

Figure 2: Adoption of the Internet by Consumers in the UK and US



E-Business Supply - Companies' Adoption

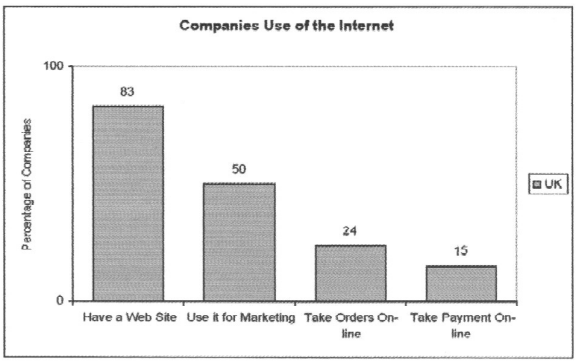
Whilst a comparison of demand is important to understand the growth in e-business adoption, increased supply of services by companies can also stimulate growth, since useful and innovative services will encourage use by more customers. Considering the use of e-business by companies also gives an indication of the likely growth of b2b services, since businesses are likely to be encouraged to adopt e-business if their customers or suppliers are also doing so.



FThe use of e-business by firms in the UK is shown in Figure 3. It can be seen that the majority of firms currently have a web site, but that only a fraction of these take orders on-line and very few receive payment on-line. This is an example of companies adopting a staged approach to e-business, discussed elsewhere in this report. Companies wish to first become familiar with the 'lower risk' e-business applications, such as having a web site, before they develop more sophisticated services such as taking orders and receiving payment on-line.

Another method that can be used to compare the level of e-business adoption in the US and UK is to consider the number of businesses in each country that are e-businesses. It is impossible to count all such businesses, but there are currently around 400 businesses that are predominantly e-businesses quoted on the NASDAQ market in the US, each with an average market capitalisation of around $2 billion. In the UK, there are approximately 50 such businesses quoted on the main stock market with an average market value of half that of their US counterparts. The greater number of quoted e-businesses in the US and their larger size is another factor that adds to the overall impression that the UK is lagging behind the US in e-business.

Figure 3: Use of E-Business by Companies



3. E-Business & Information Security Management

David Milne MBA BSc AFIMA is an advisor to EMTA - the National Training Organisation for Engineering Manufacture - on e-business issues. David has a wide range of experience in the implementation of e-business strategies across industry and commerce. David is also a director of RSD ICT Ltd.

From the various discussions during the course of the mission it is obvious that the use of Information Communication Technology and the Internet for business communications and transactions is growing rapidly in the US. This dependence on technology to transmit, analyse and access information is raising a number of concerns relating to the security of the information and the risk of:

- *Improper access* - i.e. hacking and interception of transmitted data.
- *Corruption of data* - i.e. virus attack or malicious employee behaviour
- *Human error* - i.e. mis-keying of critical information
- *System Failure* - i.e. power failure, fire damage, disaster recovery etc

A recent US Department of Defence report1 indicated around 250,000 attempted breaches of military computers per annum of which around 65% were successful. Given the above situation, it is essential that all organisations have a clear policy for the secure handling and transmission of business critical information. It is clear that there is an awareness with some of the companies visited that the increasing use of the Internet and e-business will mean that an organisation will have to demonstrate that it has a strategy to minimise the risks to its most valuable assets - information and data.

Building Security into Software

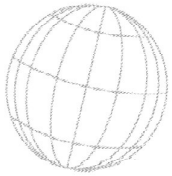
Discussions with companies responsible for the development of Internet-based and enterprise wide software - for example CommerceOne - indicated that security is perhaps the single-most system critical consideration in the development of the various software tools. The following aspects were identified as being critical to the secure operation of e-business systems:

- The use of cryptographic techniques to ensure the confidentiality of information such as credit card details, invoicing information etc.
- The use of digital signatures to authenticate the identity of people involved in transactions such as placing purchase orders, invoices etc.
- The development of clear audit trails throughout the various transaction processes in order to ensure that there is a clear record of every event in the transaction. This will resolve any conflicts between parties over whether or not a specific event took place - i.e. the payment or non-payment of an invoice. These are often known as non-repudiation techniques.
- The development of hardware and software to minimise the risk of unauthorised access to networks and systems - firewall technology.

From the discussions in the USA it is apparent that software development companies are continuously reviewing their products in terms of the above criteria and that it is an ongoing task to ensure that they remained at least one step ahead of potential abusers of the software.

Development of Organisational Information Security Policy

From the sample of organisations involved in the visit, it is clear that there is an increasing reliance on the technology to facilitate their key business processes. In all of the organisations there was an understanding that information security was a key component of their e-business strategy. Ford, Bechtel and Lucent Technologies are all involved in strategic business development which requires a secure



environment for information transactions and communications. This secure framework is needed for both internal information processing and remote access to such business systems. Their development of information security policies include:

- Ensuring that each network domain had appropriate firewall protection to prevent unauthorised system access.
- Use of encryption techniques to ensure confidentiality and integrity of data and information.
- The development of information security management policies so that each member of the organisation had a clear view of what was expected from them in terms of information security. The policy covers aspects such as physical security, communications security, system access and business continuity. Bechtel, for example, has developed a strategy of co-located servers to ensure continuity of business operations in the event of server failure.
- The use of risk assessment techniques to quantify the potential vulnerability of the organisational infrastructure.

It was apparent that information security is a key consideration for both the software developers and system implementers and thus for the successful execution of e-business. However, it was not clear whether there was a structured approach to the development of policy or the policy was just evolving as they developed their approach to e-business. From discussions with the sample of organisations visited, there also does not appear to be a recognised national standard for information security - unlike the UK which has BS 7799 which is the standard for information security management2 and an accreditation scheme. There are a number of industry bodies such as the Information Technology Association of America (ITAA) which provide a forum for the raising of awareness of security issues and the development of best practice within industries such as banking, financial services, telecommunications, energy, utilities and health etc. It is noteworthy that although there was a recognition that e-business was moving down the supply chain, there did not seem to be any urgent or structured approach to the development of audit procedures to vet and ensure that any organisation, in the customer's supply or trading environment, is capable of handling confidential information in a secure way. It is surprising to find that such a key element of electronic b2b trading- and one which is heavily emphasised in BS 7799 appears to be being largely neglected in the USA.

Sources of Information

1. Information Security Management: An Introduction.
   DISC PD 3000
2. BS 7799. Pt 1 Code of Practice for ISM
   Pt 2: Specification for ISM systems
3. www.c-cure.org/bsframes.htm



4.Engineering Council E-Business Mission to the USA and the Implications For Training

David Milne MBA BSc AFIMA is an advisor to EMTA - the National Training Organisation for Engineering Manufacturers- on e-business issues. David has a wide range of experience in the implementation of e-business strategies across industry and commerce. David is also a director of RSD ICT Ltd.

Introduction

From the discussions with the various organisations it is apparent that US industry is experiencing a shortfall in the numbers of skilled IT workers. Furthermore a significant number of smaller organisations are not fully aware of the potential benefits that trading in an e-business environment can bring. This chapter provides an overview of the current situation in the US and the lessons that can be learnt from this experience for UK based organisations.

Current Situation in the US

The burgeoning use of Information Communication Technology (ICT) and the Internet and computer networking in general, coupled with the buoyancy of the US economy, has led to a significant increase in the demand for IT related skills across all industry sectors. The growth of e-business has also meant that the type of IT skills needed within organisations is evolving at a dynamic and rapidly changing rate. With this evolution it is clear that the traditional educational channels are not able to produce the required number of suitably trained and qualified IT workers in an acceptable timescale. This situation is clearly causing severe problems for companies wishing to survive and compete in the marketplace.

A recent survey by the ITAA (Information Technology Association of America) provided an indication of the extent of the problem:

- There are around 10 million IT workers in the US - 90% based in non-IT organisations.
- The demand for IT expertise is growing rapidly. It is estimated that a further 1.6 million new IT based jobs will be created in the year to 2001.
- It is expected that around 50% of these jobs will not be filled initially.
- The greatest need for IT expertise is in the largest section of the economy - smaller (<100 employees) non-IT companies. This group has also the largest discrepancy in IT skills.
- On-the-job training is seen as the most cost effective way of giving existing employees the required skills.

The most common strategy for coping with the problem is to outsource the IT requirements to third parties, or to hire in short term contractors or bring in overseas expertise – this however does not resolve the overall problem, it only moves the problem around. Another common strategy is to shift the work onto the existing workforce – giving them additional on-the-job training to acquire the required skills.

Options for Education & Training in the US

Given the situation outlined previously, there is a range of options and opportunities, which can be pursued to provide the workforce with appropriate IT skills and opportunities:

- **College & University Training**
  These institutions provide four-year degree level qualifications and these qualifications are seen as particularly attractive by IT based companies -especially in the areas of database development and software engineering expertise. Many universities run part-time degree courses that give working people the opportunity to acquire advanced skills.



- **Private Training Institutions**
  Again seen by IT based companies as being very effective in developing skills in specific IT areas.

- **Short Courses & Seminars**
  Again very popular because they can target specific skills that are rapidly changing – for example web design. It is seen as a very attractive form of training for the smaller, non-IT organisations. Related to this are sector based training initiatives – for example the Small Business Association (SBA) have a large number of Business Information Centres where people can acquire a wide range of business skills, including IT.

- **Internal Training Centres**
  Many of the larger organisations that were visited have developed internal training expertise or "corporate universities" – for example Ford, Choice Hotels etc. These are often developed in conjunction with local universities and are seen as being an effective way of providing the specific expertise that an organisation needs. However these are expensive to operate. To offset the cost, very often the courses are offered to people outside the company.

- **Community Colleges**
  Again seen as a cost effective and flexible way of training people – particularly in small, non-IT organisations.

- **Certification Programs**
  Provides training on vendor specific products such as Microsoft. A benefit of this approach is that it provides a standard benchmark for the level of training achieved.

- **Distance & Internet Based Learning**
  This is one of the fasted growing areas of training. Several of the companies visited are in the process of setting up e-learning facilities – General Motors/Covisint, Bechtel indicated that e-learning was a very important component of their future business strategy. There is an overriding view within these large organisations that, further down the supply chain, there is a lack of education and awareness about e-business and what it can achieve in terms of b2b transactions. As indicated above, several of the large organisations are developing e-learning packages to promote e-business and prepare other companies in their trading environment to use the technology.

The above initiatives are designed to provide education and training opportunities to the existing workforce. There are also a significant number of initiatives in the US providing IT based education within the schools system.

Promotion of IT Awareness in the US Schools System

The above options provide a relatively short to medium term strategy to give people the IT skills necessary for the marketplace. There are a number of longer term initiatives aimed at the schools system, and other groups, to ensure that the younger people entering the job market are adequately skilled in information technology. Examples of these initiatives are:

- **Schools to Careers (STC)**
  This is seen as an important framework for strengthening the academic and vocational skills of young people, in order to ensure that the developing workforce have the appropriate IT expertise when they enter the jobs market. The initiative brings together employers, educationalists, IT specialists and community leaders. It provides access for young people to the IT environment through structured work placements, work based learning programs, teacher placements in industry and community centres of excellence, where school students can learn to use a wide range of hardware and software based technology.

- **Digital Opportunity Initiative (DOI)**
  This is a partnership between ITAA and a number of leading IT organisations with the aim of training members of minority groups – African-American, Hispanic and Native American – in IT skills. For example, African-Americans account for 5% of all computer programmers but represent around 10% of the general workforce.

- **PASS-IT-ON Initiative**
  Another partnership program aimed at giving IT skills and training to people with disabilities.



Implications for the UK

The visit and discussions provided a valuable opportunity to explore the key issues of e-business skills awareness, training and education. From the sample of organisations visited, there appears to be no nationally accredited vocational qualifications for information technology within the US. Apart from direct graduate recruitment, companies will often obtain training from local universities or commercial training organisations. Also popular are specific vendor related certification courses such as Microsoft. Some of the larger organisations have developed "corporate universities" or internal training centres. Looking to the future, e-learning is seen as an attractive way of training staff. Clearly organisations in the US face the same level of difficulty in recruiting staff with appropriate IT qualifications and experience as their counterparts in the UK. It is interesting to note that some organisations are bringing in the expertise from overseas – an issue which is currently being strongly debated in the UK. There are a broad range of initiatives and strategies outlined in this chapter that are designed to develop the IT skills of the US workforce and these are worthy of further investigation to ascertain the potential benefits of following similar strategies in the UK.

There is an opportunity for the UK to learn from US experience in terms of preparing and educating industry and commerce to greater awareness of the potential benefits of using e-business and ICT to improve the effectiveness of business processes and transactions. In particular there is a need to look at the supply chain environment to make the smaller companies more aware of what ICT and e-business can offer. There is also a need to provide smaller organisations with practical, learning tools, as in the US, under the aegis and sponsorship of the main customer in the supply chain. This could demonstrate how Internet technology can improve the way in which information is collected, collated, analysed and disseminated around the supply chain environment.
Government will also be needed to play a key role in this in terms of providing funding and facilitating learning for innovative and practical schemes and pilot projects to demonstrate the benefits of developing e-business strategies – particularly for the smaller organisations. In the UK as in the US, smaller businesses constitute the largest component of the economy where the largest gap in education and awareness of e-business potential is located. In addition to the above, given the nature of the UK structure of national vocational qualifications, there is an opportunity to develop a recognised qualification to cover the various aspects of e-business and this qualification should be targeted at people in the smaller companies who often have not had the opportunity to achieve any nationally recognised IT based qualification.



5. Building Business Performance

Barbara Walker is Head of Information Society Policy at the CBI - a job that is Government-facing in tackling e-business policy issues, and business-facing in encouraging the exchange of experience and best practice among businesses.

Our US hosts talked readily about how they were running their businesses and their excitement at meeting challenges of this process. They did not naturally stray into areas of keen concern to the group, such as the degree and style of legislation imposed on them, or where the US stood in international league tables. They were far more focused on where they themselves wanted to be, and how it felt to be getting there.

The statistics on who's ahead don't give clear-cut answers either. The latest report from the UK eEnvoy shows that:

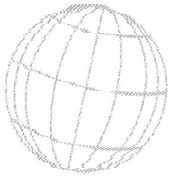
- 50% of the US population is online, compared with one third of the UK's. But that UK figure shows a 50% increase from September 1999 to 2000; twice the US increase
- 90% of UK employees, and 93% of US employees, work in an organisation that is connected to the internet
- Are those organisations really connected - that is, can orders be placed and payments made online? Among US businesses, 15% allow their customers to order and pay online, as against 13% of UK businesses. But the lead is reversed when it comes to dealing with suppliers - with 28% of businesses doing this, the UK is well ahead of all its competitors
- The UK is the largest e-commerce market in Europe, with retail e-commerce estimated at £1.2 billion and b2b at £800 million in 1999. The US is way ahead, with a total market estimated at £81 billion. But the UK is closing the gap. Relative to the size of the economy, e-commerce spending grew by 350% in the UK in 1999, compared with 70% in the US. E-commerce is predicted to rise to between 4% and 7% of GDP in the major countries by 2003.

UK online - Annual Report (September 2000) accessible at www.e-envoy.gov.uk[1]
And according to a recent survey by HSBC, UK companies are doing very well at ICT training, with a higher proportion providing it than the US, and our schools are highly wired, second only to Canada's. On a 20-year view we should have a particularly well-educated workforce, leading to higher productivity. But the main message is that action is needed now on skills development, to bring that about before 20 years have elapsed.

Benchmarking performance against other countries has its attractions, but the plethora of figures available from different sources is a problem. It's difficult to make co-relations and cross references, to get the data needed for a true picture rather than a narrow or controversial impression. The main reasons are:

- Some measures cover all countries, some just the OECD, some just Europe and some just the G7 nations.
- Figures may show the output of the ICT sector, or the take-up of ICT or of e-business applications - that is, installation; or the degree to which they are actually accessed and used by businesses as a whole, and/or by SMEs, and/or by individuals.
- Almost all the figures relate to input, not to output. That is, even if an official survey measures not the number of PCs available but how often they are used - it does not measure just what the benefits were to the people involved.

The deficiencies in comparative data are being tackled. The OECD is working on a set of common definitions for e-business data to be collected by governments within that organsiation. As for the need not just for input but for output data, the Alliance for Electronic Business is working with the UK government to



define measures that illustrate how well the UK's e-economy is delivering results. Both types of improvement to the base of the statistics are important. It is valuable for government itself and for business lobbyists to have the comparative information that the eEnvoy and the e-commerce minister now publish regularly, but these improvements in comparability set out here will make it a much richer source of understanding and of new insights.

But what about individual businesses? It is debatable how useful it is for a business to know where its country stands in a linear league table. The business itself will be interested in particular countries for their growth in income and investment, in others for the nature of their regulation and tax regimes, in others for their investment in the infrastructure. It may want to obtain the data to give a picture for example of the growth in use of e-tailing. Such a picture may be the result of other factors. Again, what is needed is a universal basis for data collection so that each user of the data can get what they individually need.

The big question for astute businesses will be whether these national league tables mean anything to them when the only important measure is how well the business is performing, against how well it could be performing if we did things differently?

Such an emphasis on one's own performance is something we saw a lot in the US, but it is evident in any country, among the best businesses. It still requires external focus, and our discussions with the US companies underlined some valuable kinds of external focus.

First, find out what factors affecting your e-business performance are matters of public policy and regulation. Are the problems national? (they usually are), are the solutions international? (almost invariably) and what can you realistically do to tackle them? The answer is likely to be by working through government which, though we might not like its legislative role, is still the agency that has the legal status and clout to negotiate in international organisations. The UK Government does welcome and draw great value in those negotiations from input by senior business people and often there is the chance for business leaders to take part in top meetings of for example the WTO, OECD and the European Council of Ministers.

The main areas of e-business policy under study in international bodies are taxation, trade policy and the creation of intellectual property, legal frameworks that are flexible enough to stand up to borderless trading. Intellectual property is also of key importance as more and more businesses recognise that their knowledge is their lifeblood, and that they have to be careful about who they share it with. These international negotiations take a great deal of time and progress may not be perceptible to the uninitiated.

More for the action-oriented is taking part in national legislative processes. The Electronic Communications Act 2000 was some three years in gestation, but that was due to Governments keenness to consult thoroughly on legislation that would impact on new technologies: it must anticipate market developments so as not to stultify them. The Regulation of Investigatory Powers Act 2000, by contrast, took only a year from White Paper to the statute book. Business, through the CBI and others, was able to make a welcome degree of change to both of these at the consultative and bill stages.

To go back to the clever question 'how well is our company performing, against how well it could be performing if we did things differently? That is a very subjective matter and is best absorbed through real constructive dialogue with other businesses who are willing to pass on experience and ideas. That is what we gained during our mission to the US. Businesses can replicate the experience by using workshops and thinking sessions hosted by other businesses. Going to workshops in order to take on board quantified best practice and learn how to do it is fine, but increasingly the smart players are seeking out those other business people who are confident enough to think together with their peers across the sectors about their adolescent projects that can't yet be branded success or failure but that are having quite a racy time getting there.

Barbara Walker is Head of Information Society Policy at the CBI. The CBI has made a new commitment to promote e-business for its member companies

- *It launched on 21 November a new eBusiness Council, which collects and puts to governments and to the business community the interests of companies in all sectors as they move into the new economy. This CBI Council complements the Government's Information Age Partnership, representing the supply side, for which the CBI now provides the secretariat*



- *It launched in November a major survey of how UK businesses are using e-business - not only in their supply relationships but in adapting the way that the whole organisation works. Its findings will be ready in January 2001, and will be followed by workshops to help all of us understand these developments, and how trends for the future are shaping up*

- *It runs an Information Society Forum bringing together those in CBI member companies who find value in getting together informally to exchange experience and ideas on their use of knowledge and communication in the broadest sense - not just ICT. This forum is an excellent way for companies to think together towards the information age.*



6. Customer Supplier interface in the e-business world

David Smith is Business Operations Director of ICL

Customers are overwhelmed and confused about e-business for their business. Suppliers are exploiting this but with limited knowledge of how e-business will actually effect the customer's business. This is, perhaps one cynical but not totally untrue view of the current perception of the customer supplier relationship in the fast moving market place of e-business. E-business has promoted the customer supplier relationship to a level that has not been seen since the days of selling critical applications on a mainframe. Customers want to understand what e-business is all about, they want to be educated, they want to take on an e-business solution. They want to improve their business but very few suppliers are providing for the total needs of the customer.

Through the visit to US companies all these aspects emerged. They were not all exhibited by one supplier or by one customer but the frustration of not being able to have a fully beneficial relationship was apparent in the majority of cases. So how has this situation come about? It is worth exploring the mind set of customers and what they have experienced prior to the e-business revolution and how suppliers sold into the existing state of the market and responded to customers needs. It is this situation that exists today in the UK.

Current Customer view prior to e-business

There is a need to distinguish between customers who are of the more traditional IT type and have been involved in mainframes and applications for a number of years and those who have grown up with the e-business revolution and SMEs.

With the former, the traditional approach by the customer has been to specify a requirement and expect this to be delivered in a fully working state some 9 –12 months in the future. Selling has traditionally been done to the IT department with the budget also being controlled by the same. Users of the system were invariably trained prior to the system being available and on-going support was forthcoming from the supplier. An ongoing relationship invariably flourished between the supplier, customer and users of the system.

With the advent of e-business the traditional customer has in a very short time experienced a significant change to the parameters of acquiring a business solution. Bechetel, a construction conglomerate, is experiencing this situation now. The technology is changing more rapidly than ever before, competition from unexpected sources is emerging, solutions are required in a shorter timeframe, cultural and process changes are invariably required to make the most of the solution and there is still the small matter of keeping the business profitable while this is all going-on!

For those companies entering the market in the early stages of the e-business revolution the business parameters are not quite as daunting, but none the less, are giving cause for concern. Selling of solutions was mainly to the marketing manager who generally recognised the need to implement e-business and was eager to exploit its possibilities. This resulted in pilot and prototype solutions that gave the company a presence in the e-business scene and allowed experimentation with the new facilities in a short timeframe. Further pilots were developed. What soon became obvious was that for the business to maintain its foothold and use of the e-business solution, a more robust system with the attributes of the mainframe application were what was required. In essence we have arrived back at the traditional application mainframe requirement but with a speedier more efficient solution run across the internet.

For SMEs the situation is the same as the above but with the added threat that if e-business is not embraced within the company then efficiency may be compromised leading to higher prices, greater competition and lower visibility in the market place.



In all these cases the customer is becoming increasing unaware of what is possible in the e-business space. New buzz words are heard but are they understood, new solutions are offered but will they produce the business improvement, solutions are implemented but what will the real impact on the business and its employees be many such questions need to be answered. There is much hype by the suppliers and this is confusing customers. Suppliers are eager to sell solutions but are losing the human touch. This situation needs to be rectified in order to give everyone a chance to benefit from the e-business revolution.

The main points of contention are something like:-

e-business impact	Traditional Companies	SMEs	Emerging companies
Embracing speed of change	*slow*	*Slow*	*fast*
Understanding e-business	*slow*	*Slow*	*fast*
Selling interface	*IT Manager*	*Managing Director*	*Marketing Manager*
Implementation	*Long*	*Limited timeframe*	*Pilots and prototypes*
Threat to business	*medium*	*High*	*Low*

Parameters impacting change to Customer Supplier relationship

It was evident from the discussions with companies in the US that a significant shift was occuring in the interface between the customer and supplier. These changes were being brought about by:

- Recognition that e-business solutions are necessary for business survival – they are not just a nice to have
- nternal cost savings can be made and external spend reduced through implementation of a business to business solution
- E-business solutions demand the attention of the CEO and business managers and not just IT and Marketing managers
- E-business solutions could change the culture of the business without a company's knowledge – and no one wanted this to happen in an uncontrolled or un-managed way
- Customers were becoming more wary of the claims of suppliers – they were looking to see a way through the hype and what the impact of an e-business solution really entailed.

The new way of interfacing

There is a spectrum of changes sweeping through the interface between customers and suppliers. Not all were evidenced in all companies visited. However, if all companies appreciated what was required, then e-business solutions would become more acceptable within an organisation and be presented by the supplier in a more user friendly manner.

The changes apply both to customers and/or suppliers. These are detailed below together with a view as to how the changes have been taken on in the US and how possibly UK companies need to react:

- Customers need to jettison long held beliefs – e-business solutions are not a straight replacement for existing systems and processes although many purport to do that. E-business solutions are a new way of conducting a particular or new aspect of business. If they are to be successful then traditional methods and processes need to be foresaken to allow a new operation to emerge.

US companies (eg Choice Hotels and Ford) tend to be more willing to do this than their UK counterparts. This may be to do with the greater entrepreneurship or the more aggressive market place in which they operate. All UK companies need to become more receptive to ideas and not be constrained by past practices and prejudices.

- Customers are beginning to want to understand the capability of e-business and associated technology. Gone are the days when customers accepted the words of the sales person. Customers want to be educated and are turning to their peers to understand the benefits of e-business solutions and the return on investment both



in percentage terms and timeframe. Customers are networking to be more aware – no longer are they being blinded with new buzz words.

In the US some suppliers (eg RWD and etensity) are starting their campaigns with educational and awareness sessions. These not only provide the customer with a framework on which to position their e-business knowledge but also set a consistent terminology on which to understand and build the customers e-business solution. For UK companies, particularly SMEs, this understanding is key and suppliers will have great difficulty in selling to SMEs if this education and resulting understanding of e-business is not in place prior to identifying an e-business solution.

- To be successful customers need an e-business leader to champion and manage the up-take of e-business solutions within the organisation. Communication, an internet policy, tactics and a strategy that is adaptable as implementation proceeds are some of the main responsibilities of the champion. This is not only leadership of the solution but also the change management of the processes and cultural change that is integral to success.

  Every customer visited by the mission had an e-business champion. The person invariably sat on the board and was actively involved in the e-business programme. It is not sufficient for the person to be a silent champion. Decisions need to be taken, often more speedily than in the past at the top of the company which will help the strategy and implementation of e-business. Failure to have an active champion most probably means failed e-business solutions. Companies in the UK should not proceed in e-business without identifying a champion.

- Culture change within a company, particularly within a traditional business, is paramount to a successful implementation. In the early and simpler implementations of e-business changes to the process and culture of the company were only minimally addressed. Today however, with the increasing emphasis on much more far-reaching and penetrative systems, the impact on the working process and people within the company is significant. Changes from board level to shop floor are undoubtedly required and before any e-business solution is implemented this needs to be understood and education and training provided. As one of the companies visited said ' Culture eats strategy for breakfast'

  All the US companies stressed the need to recognise and act upon the cultural change aspects of e-business. Some had learnt the hard way, not recognising the need for cultural change and having to abandon the initial e-business project and recommencing after addressing the cultural issues. This is particularly true for traditional and SME type companies.

- Consultancies are increasingly placing emphasis on cultural change as a precursor to e-business implementation. This together with process change should be seen as part of the overall e-business solution. This may be seen as the consultancies trying to obtain more revenue but, however, cultural change is addressed, it needs to happen.
  US companies seemed to welcome this initiative by the consultancies (eg RWD Technologies) but recognised also the need to identify someone within the organisation to take on the role of cultural change management.

- For a company the most successful implementation of e-business seems to be where the solution overcomes "points of pain" within the company or puts the employee in a situation where the e-business solution has to be used. For instance, payslips only accessible on the intranet would help with ensuring everyone accesses the intranet. Making the ordering of new cars or other prized personal items only available through an on-line procurement system would ensure experience is gained of using such a system.

  Only Choice Hotels and Ford had used this approach but both reported the initial unease felt by users but this was quickly overcome and the e-business solution generally accepted. UK businesses need to decide for themselves whether this approach is viable within their business.

- To make e-business happen both the customers and suppliers are increasing recognising the need for education.



Education both at the initial engagement stage and also prior to and during the implementation of the system. Whilst the latter is generally viewed as training, the education of the customer's team in e-business is something that is required from the consultants and/or education sales people. The question being raised is when does free education stop and charged education start?

US suppliers are still wrestling with this problem. Consultancies are not disposed to giving information and time away for free but the customer argues that understanding and education on a new topic is required before embarking upon a new initiative. How this will be resolved in the US and the UK is uncertain.

- As the complexity of the solution and potential effect on a company increases the more fundamental is the solution to the business. As this effect increases then the decisions are tending to migrate back to the CEO and finance managers with the marketing and IT managers providing recommendations. This is particularly true for b2b solutions.

- All the US companies visited recognised that e-business would have a fundamental effect on the operation of the company and had started to take back control of decision making. Advice was still sought from other areas of the company and the trend is for every area to be involved as e-business touches each and every part of an organisation. Within the UK traditional and SME companies should have no problem relating to this trend and the emerging companies will probably take this in their stride.

- The e-business market place is crowded with offerings and in turn with consultancies and sales people. To be successful, consultancies in particular, need to engage their clients with energy and enthusiasm. Not only is this to their advantage but it provides an image to the customer in keeping with the e-business market place.

  Many of the US companies visited are trying to distinguish themselves in an overcrowded market. Snazzy sales collateral, free education, niche offerings and reference sales are some of the activities being employed. Within the UK the market place has not yet reached the frenzy as in the US and consultancies have time, but not too much, to carve out their competitive advantage.

Conclusion

The thirst for e-business solutions will continue unabated for many years to come and those who ignore the challenge and fail to take this on board will put their business in jeopardy. The up-take of e-business is not easy. However learning from the experiences of others and being prepared to amend strategies and implementations along with both the changes in technology and the interfaces between suppliers, customers and partners are all things the business can do to help itself which will make it more likely to succeed.



7. The Manufacturing Company View

Alan Watts is the Managing Director of Yelo, a designer and manufacturer of electronic test equipment

Introduction

This paper looks at the threats and opportunities presented to a traditional manufacturing company by the growth of the Internet and e-commerce. It is particularly aimed at small to medium sized companies but in fact the principles are valid for larger organisations as well. It also picks up on a number 'nuggets' regarding internal company information and the use of intranets.

Threats and Opportunities

A straw poll survey at a conference of executives from the Fortune 500 companies showed that most thought their attempts at e-business have so far been unsuccessful. The reason given was that they hadn't done the e-strategy first ie they had just bolted the Internet onto their existing company. This point was brought up by virtually every company on the mission. In order to use the Internet successfully, it is vital to re-examine the entire business and business process from scratch in light of the new threats and opportunities it presents.

There are two specific trends which have the potential to hugely affect businesses: the creation of transparent markets and the closer integration of the supply chain.

Transparent Markets

Many traditional businesses compete in their markets using a mixture of on-the-ground sales work, adverts and catalogues. It can often be relatively hard for customers to establish just which supplier is providing the best overall deal, especially with special offers, bundled prices and discounts. This fog of information allows competing suppliers to largely keep their existing customers and often maintain prices higher than they might be, since it requires so much resource for customers to properly shop around.

New Web-based businesses are now appearing which take in the supplier information and present it in an easy to compare fashion for buyers, effectively acting as re-sellers or market makers of the suppliers' products or services. The low cost of distrubuting this information on the Web makes this very attractive. In one business model, the market making company charged 10% of continuing revenue to the suppliers, however the traditional cost of sales using agents was 23% so they were willing to pay it. From the point of view of the buyers, they see lower costs and less work to achieve clearer decisions. The suppliers may not like the clearer competition, but once their competitors join they have no choice but to follow. If they stay outside, unless they have a strong unique selling proposition, they will lose market share or worse.

The effect on a company's market could be huge. This transparency must drive down prices, it must also largely cut out agents, advertisers etc. Each business must ask itself two questions:

- What would happen if this occurred in our market?
- Could we be the ones to create this transparent market (before someone else does)?

From the supplier's point of view however, research has apparently shown that customers are not solely interested in price, so there remains a good chance to sell on quality of service etc, but prices will still be reduced.

For any companies considering setting up such a market, there are some points worth noting. Some markets may be set up which cost neither the supplier nor the buyer any fee. These e-business models which base their revenue on advertising have become very unpopular with investors in the USA. This trend is likely to be repeated in Britain.
In creating business to business (b2b) markets,



there is usually some initial scepticism from buyers. As a result, it is often valuable to first sell business to consumers (b2c). In the example seen of a market for selecting the best telecoms supplier in the US, many buyers tried it for the their home phone first. This gave them confidence before risking it for their company.

Closer Integration of the Supply Chain

When smaller businesses look at the supply chain integration moves being made by the very large companies, there is a temptation to say 'it doesn't affect me!' However this is wrong as the effects will ripple down the supply chain. Smaller companies who cannot join this move, risk being excluded from large parts of their market.

Consider the example of a large car manufacturer. The main factory is run on just in time management systems (JIT), almost no parts are held in the factory with deliveries being called for on lead times of perhaps 2 hours from suppliers. This provides huge savings to the original equipment manufacturer (OEM). However when these parts are traced further down the supply chain, the supplying companies hold much larger stocks because they fear the punitive contracts they have to agree with the OEM. Holding these parts costs money and ultimately puts up the price to the OEM. And this effect ripples down the chain to the suppliers' suppliers etc. The reason the lower tier suppliers must hold stock is that they have little forward visibility about demand.

Now consider a totally integrated supply chain. Information on likely orders is provided all the way down the chain from the OEM and to the lower tier suppliers. And in the opposite direction, up to date stock and lead time information is provided back up the chain. In a utopian case, when someone buys a car in Kansas all the suppliers immediately know to manufacture their parts for its replacement. This lean manufacturing chain has great potential for reduced cost – all because of the power of shared information. Any supplier who can not integrate into this system will be excluded from such a supply chain.

Furthermore, the OEMs are reaping large administrative or transaction cost savings by ordering on line. Again any lower tier supplier who can not accept orders in this way will ultimately lose this business.

In this case also the losers will be the middlemen and agents.

Innovative Sales Methods

Many US companies already sold significant values of products on the Web. One claimed to have sold a product with a single piece value of $1M this way. However in general the goods sold fell into two categories:

1. Smaller value items, say below $10,000
2. Repeat items eg spares

In the world of engineering, there appeared to be no move yet towards replacing the face to face engineering sales meeting with some innovative Web-based system. Most companies said that the personal aspect of selling was too valuable to risk losing in this way. When pressed, all representatives of the US companies we visited said that culturally their customers were simply not ready to do this yet.

Internal Company Information

The use of intranets is much more prevalent in US companies. These are used to disseminate information to employees and to build on the team culture.

One of the early problems raised with intranets was getting the employees into the habit of using them. To do this, many US companies had initiated some 'killer applications' which drove the employees to use the system. In other words, activities which were important to the employees and which could only be done on the Intranet, e.g:

- On-line pay slips (print your own) and on line (only) expenses forms
- Rules for travel and booking information
- Interview guidelines
- New employee orientation
- Tips using standard software packages eg Word, Excel etc.
- Hot line e-mail contact to CEO with guaranteed response



It was also common to have a technical answer service where any questions posted would be answered within 24 hours. This was obviously used to build up the frequently asked question (FAQ) section on the intranet.

A more radical suggestion was to have an employee survey on the intranet. This allows anonymous feedback (requiring trust of the human resources department) and must be seen to receive answers.

All of the above are aimed at staff who have a computer on their desk. However to provide some of the intranet benefits to the rest of the staff, some companies created a Web café at work, often in the canteen. To control this there was a requirement to sign on and accept some monitoring. Facilities to access the Internet ie externally were also provided using the employee's own time which was seen by the staff as a benefit.



8. E-Business applied to Supply Chains and Aggregated Purchasing

Anthony Wilcox, Strategic Business Manager, BNFL

Richard Kirby, Innovation Programme Manager, Anglian Water

Anthony Wilcox is currently responsible for the development and subsequent implementation of an e-business strategy for the BNFL Group

Automating the supply chain is one of the key goals an organisation can aspire to reach. The ideal is to create a business system that functions automatically wherever possible. Typically, however, companies have tended to improve their processes incrementally, automating where practical. The development of the Internet and Internet related technology has added a new dimension to the solutions available. XML (eXtensible Markup Language), the universal language for structured data on the Web, can be used to integrate back office system applications such as supply chain management, procurement, shipping and logistics. b2b solutions enable companies to leverage investments in existing Web sites, applications, and local data sources, reducing the time and complexity of implementing true b2b e-commerce compared to the more traditional EDI solution.

The development of b2b online trading is currently being driven by a very mixed bunch of companies. Certain industry sectors – automotive, printing and IT – are historically well placed to move quickly to the Web. Other industries will find its advantages harder to pin down.

Although not a true trading hub, Choice Hotels International (CHI), headquartered in Silver Spring, Maryland, have implemented a Web based solution for their own purchasing needs.

Choice Hotels International franchises more than 4,900 hotels (75% in the USA), either open or currently under construction, in 39 countries world-wide. Of the $30Bn of goods and services purchased per annum by the worlds hotel business, some $1.5Bn is attributed to Choice Hotels International.

CHI is attempting to provide their individual franchisees with the benefits of the aggregated purchasing power of the CHI group through ChoiceBuys.com. CHI's strategic vendor sourcing team negotiates competitive prices with approved suppliers guaranteeing access to the CHI hotel base. Once a supplier is approved it is required to submit its electronic catalogue within 60 days for publication on the ChoiceBuys.com Web site, allowing individual franchisees to order online direct with the approved supplier. ChoiceBuys.com is used for purchases ranging from pens to bed linen, beds to mini vans.

There have been a number of challenges to overcome both from the franchisee and the supplier base. These have included for the franchisee, resistance to change, lack of technology knowledge and long standing loyal relationships with local suppliers. For the suppliers the challenges have included, lack of technology knowledge, development of their own e-commerce site, overcoming the threat to local sales reps, the lack of developed internet policy and the acceptance of more rights to the buyer.

Since the launch of ChoiceBuys.com in April 1999, 55% of the US domestic hotels have subscribed to the system.

To date CHI have no plans to expand this initiative outside of their own hotel network, operating it currently to gain competitive advantage. If CHI were to invite other hotel chains to participate in this venture then a true global trading hub would have been established.

Traditional engineering and project management companies such as Bechtel are facing increasing competition in the global market place. Bechtel is a long-established family-owned business with a solid core of experienced engineers . However, the owners have recognised the need to embrace e-Business solutions and a small but dedicated e-Business team has been set up in the San Francisco head office under the leadership of Robert Dove, with four main aims:-



1. to do things quickly
2. to keep in tune with the customer
3. to re-invent Bechtel as an exciting place to work so that employees want to work for the company
4. to create new growth opportunities

The application of e-Business to drive down supply chain costs is one of 6 new initiatives that the team has identified. The company has between 900 and 1000 live projects in 60 countries and employs around 27,000 people. Bechtel recognises a growing need to involve both suppliers and clients. " We must learn to play poker with the cards face-up on the table" says Dove. "There is no doubt that efficiencies are there for the taking, starting with some low hanging fruit such as our $6m Fedex bill."

The emergence of b2b trading hubs or exchanges has exploded over the last 12 to 18 months. There are currently in excess of 500 exchanges that are funded with at least $5 million. By 2003 that number is expected to climb to anything from 2,000 to 8,000, which, of course, will be followed by a significant consolidation and shakeout.

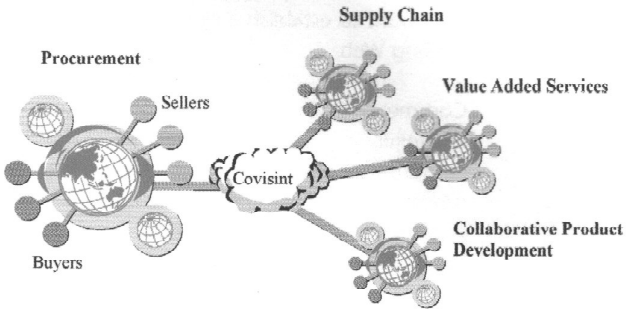
The automotive industry is a perfect example of the need for consolidation. In February of this year, three car manufacturers announced a plan to create the world's largest virtual marketplace. General Motors, Ford and DaimlerChrysler plan to develop a single Internet based network designed to improve the way in which they trade with their many suppliers.

GM and Ford already had exchanges operating offering catalogue purchasing, bidding and price quotes, on-line sourcing and auctions. In addition, supply chain management functions such as capacity planning, demand forecasting, production planning, supply chain transaction automation, financial services, payment and logistics were included.

DaimlerChrysler's plans for a third competing exchange forced the issue of consolidation into the open. "As we continued to build our separate exchange sites, we quickly realised traditional, individual stand-alone models weren't the winning strategy for us, our industry, our suppliers and, ultimately, our customers," said G. Richard Wagoner, Jr., president and chief operating officer, General Motors. "By joining together, we can further increase the pace of implementation, thereby accelerating the benefits to everyone involved. We are excited about the opportunity to build on what each of us started separately and create the best trading exchange in the world."

GM, Ford and DaimlerChrysler have since been joined by Nissan and Renault, and Toyota has committed to the exchange for the purchase of non-production goods such as office supplies.

The new enterprise will offer open participation to all auto manufacturers around the world and their respective market of suppliers, partners and dealers. The venture will operate as a separate business, Covisint, and operate independent of the automakers.



The US Federal Trade Commission and its German equivalent, the Bundeskartellamt, gave regulatory approval of Covisint in September. The FTC has left the door open, however, for further investigation and action if required. Following approval, Covisint moved swiftly and marked the official start of on line trading on 6 October 2000 when it conducted its first auction.

For buyer and supplier, trading online can result in considerable cost savings. However online purchasing is the most basic service the exchange will have to offer. Covisint is a platform enabling virtual integration of all partners – a communication hub that is shared by the participants.

In addition to the procurement side covering such things as catalogue, sourcing, auction and financial, services, the hub can be extended to include forecasting and planning, material flow management, co-ordinated transportation, and

other supply chain aspects together with collaborative product development and value added services such as training, standardisation of documents, employee market place, and decision support and analytical tools.

The information flow model described by Covisint is not "one to many", but "many to many" and is designed to "make information dance."

The technology, which enables all of this to work, is supplied by Commerce One, part of San Francisco's growing East Bay e-Business solutions community. As the founder of the Global Trading Web, Commerce One enables buyers and sellers around the world to trade in a barrier-free environment.

Commerce One offers solutions for companies who want to establish a portal on the Global Trading Web.

Commerce One's Global Trading Web is essentially a b2b trading community, comprising many interoperating e-marketplaces running on the Commerce One marketsite portal solution. In principal, the Global Trading Web creates access to world-wide markets, allowing anyone to buy from anyone, any time, anywhere. In practice, current on-line trading communities are almost totally single hubs built around a particular vertical market.

By signing a deal with Commerce One, an enterprise will have its 'business standards' e.g. financial and ERP systems, mapped to the Commerce One Business Library. Once this mapping is complete the enterprise then has connectivity to all other subscribing enterprises.

With the explosion in the number of exchanges being created, Commerce One's list of partners is impressive. The list given is already out of date with the notable exclusion of Covisint.

As the Commerce One solution requires the mapping of an enterprise's internal systems to the Commerce One Business Library, many organisations wishing to enter the age of true e-business must first rationalise and integrate their own internal systems. For many the resources required to perform this task will be enormous and should not be underestimated.

Dr Marty Tenenbaum, one of Commerce One's founders and leading visionary, foresees a global network of trading hubs with transparency of trading between and within each hub. Whether or not this vision is realised will depend upon the extent to which global businesses are able to forge new trading alliances and business models with far reaching effects on world commerce in the next decade and beyond.

The Global Trading Web
The World's Largest B2B Marketplace



9. In legal and practical terms: what does e-business mean for my business?

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This is the root question - to which the root answer is: it depends upon the nature of your business. The first thing any organisation seeking to apply e-business principles to its business must do is to look afresh at itself, its current position and its desired position. Then to conceptually put aside (but not throw away) the way it has always done business and ask how best it could do that same business or even an entirely new business. In short a major conceptual stock-taking exercise is a very good starting point.

Encouraging signs

One observable feature of the mission to the USA was the relatively backward and fragmented mobile phone technology in the USA. Whilst it does not at present impact to any great degree on this report it is noteworthy that the UK and the EU are already ahead of the USA in mobile applications. The November edition of the BCS journal: Computer Bulletin flags up the predicted rise of mobile e-commerce ("me-commerce").[1] From our lead in me-commerce applications, there is evidence to suggest that UK firms should not just set their sights upon catching up with the USA - but also upon the possibility of leapfrogging it in areas where the UK enjoys some market advantage.

Further good news is to be found in the December edition of Engineering Technology[2] the journal of the Institute of Incorporated Engineers which quotes new DTI statistics which indicate that some 27% of UK businesses are now trading online. Furthermore it states that over 1.7 million (up by 1.1 million over last years figure) i.e. 81% UK Small to Medium Sized Enterprises are now online although may well be so passively rather than trading their own wares This figure compares well with the equivalent figures of 83% in the USA and 80% in Germany.

Scope

This and the next chapter seek to flag up and explore some of the main legal issues which any e-business solution will require to be considered in their practical context. As such these two chapters should not be taken as legal advice. The reader is advised always to seek appropriate legal advice. However, having understood and digested this and the next chapter the reader should have a good handle on some of the main fundamental legal and practical issues involved in e-business.

E-business

If done to best effect e-business is not about bolting a web-site onto an existing business. Rather it is a great housekeeping opportunity to redefine many facets of that business at the external vertical and horizontal market interfaces and internally via an intranet. It is then possible to make the front to back e-enabled business more efficient, transparent and responsive.

Solutions implementation: US and European paradigms

One way in which e-business has been implemented in the USA has been by trial and error as part of a continuing cycle of refinement and redesign. Within a matter of months of implementation a solution can seem outdated and in need of replacement. However, US businesses not only accept but embrace change with enthusiasm as a constant necessity and welcome it as a means of staying ahead of competitors. The essential starting point is taking that first step to create a web-site and or putting solutions into practice.

Once the deficiencies in the web-site or other solution become apparent then they are redesigned with no regrets. This is how US corporations stay on the technological leading edge, they chase it with less caution than Europeans. Europeans tend to look deeper into the task, anticipate and solve likely problems and consequently implement solutions slower but

1 Nicolle, Lindsay at pp.20-2.
2 At p.6, quoting from the DTI-led UK online for business programme.



deeper. This sounds attractive to an over-specifying perfectionist engineer. However, the faster innovation cycle of systems development in the US model seems to keep it in conceptual and implementation terms one step ahead. The problem with the European model is that by the time the perfect system is designed and implemented it is well behind the leading edge. The Americans tend to have a mindset which allows them to just get on with their task with great enthusiasm.

The need for legal advice when designing (e-)business solutions

Because IT and the Internet are subject to such rapid change it is difficult to predict how certain strategies and solutions are likely to function in practice over more than a few months. This lack of forward visibility could be likened to driving in fog on a journey which one has no choice but to make. It is unsurprising that e-business solutions and some e-businesses as well as being massively successful can also crash on a similar scale either financially, technically or legally.

The answer to the question posed in the heading of this chapter above will be different in each case! Legal advice needs to be taken along the path toward the answer, lest conceptually pure but legally problematic solutions are reached. There is perhaps no better current illustration of legally problematic solutions than those which have led to Microsoft's embattled position, both in the US courts under anti-trust laws and in the recently initiated European Commission investigation into its activities in the European Market.

Microsoft a lesson in the learning

Microsoft currently faces the prospect of having to cut itself in half following the Judgement of Judge Thomas Penfield Jackson in the Columbia District Court on 7 June 2000. Judge Jackson's Order compels Microsoft to divide its business into Applications and Operating Systems. Furthermore, restrictions have also been put on Microsoft's future behaviour in the market. Not surprisingly Microsoft is appealing the decision. Probably just when Microsoft thought things could not get much worse the European Commission began investigating its behaviour in the European market. No doubt Microsoft's competition law battles will run and run on both sides of the Atlantic.[3]

Some US corporations rely quite heavily on "visionaries" to help them to see ahead of the curve and to engineer solutions for the future. Once the vision is crystallised, then the optimistic 'can do' culture of the US is apt to drive the vision forward until it becomes a reality. It is perhaps this relative lack of caution and positive mental attitude which may lead some US corporations to either fail to take legal advice or to disregard it. As Microsoft have recently discovered this can be an extremely problematic course to pursue.

What then are the main legal questions?

The answers to this question again depend upon the nature of the business and what it seeks to achieve. However, e-businesses need to be aware of amongst others: data protection, contract formation including for practical reasons security and authentication issues, competition (anti-trust in the USA) and intellectual property laws. Of all these legal issues the one which consistently cropped up on the mission was b2b e-marketplaces and the implications of competition or anti-trust law for them. Similarly it was allegations of anticompetitive behaviour against Microsoft which led to its embattled position as outlined above. Consequently, this topic was felt to be so topical and important that it is dealt with separately in the following chapter. However, the remainder of this chapter seeks to provide answers to some legal questions which commonly concern businesses which are migrating to online e-business solutions.

The online world is lawless like the Wild West isn't it?

No, not at all! This is a very dangerous belief which an alarming number of people seem to share. In fact the internet is heavily regulated. Most laws apply equally whether online or offline. The Internet is a new medium in which those laws are applied, not a new medium devoid of laws just because many laws came into being before its existence. Although it is true that the law is struggling to keep up with the pace of change, it is noteworthy that English law has grown by being flexible and adapting to meet new challenges. However,

3 See: *United States of America v. Microsoft Corporation; State of New York, et al v. Microsoft Corporation; Microsoft Corporation v. Attorney General of New York (Eliot Spitzer)*; www.usdoj.gov/atr/cases/f4900/4909.htm and www.thestandard.com/news/special/display/0,2129,x15759,00.htm

until new scenarios come before the courts it is to varying degrees a matter of informed speculation and legal analysis by reasoning and analogy as to how those laws will in practice be interpreted and applied. Furthermore, with the global reach of the Internet the law applicable to many acts can be multiplied by cross jurisdictional agreements and or interactions.

Contracting online

When, why and how does an online contract become binding?

For a valid contract to be formed there must be: (i) an offer on certain terms agreed by the parties so that there must be a meeting of the minds, (ii) intention to create legal relations, (iii) consideration moving from and to each party to the bargain, (iv) acceptance of that offer. These fundamental principles of English contract law are long settled and independent of the medium used for formation of the contract.

Recently, Argos mistakenly published the price of some television sets on its web-site for £2.99 when it intended to publish the price in relation to these television sets as being £299. Unsurprisingly, the web-site soon notched up around £1,000,000 worth of orders.

Argos's main argument in seeking to avoid those orders was that its web-site was not an offer, but a mere "invitation to treat". An invitation to treat is an established precursor to an offer in English law. An invitation to treat is in effect an invitation to potential purchasers to make an offer. This analysis provides that when goods are displayed in a shop that this is an invitation to treat. When a potential purchaser picks up an item and presents it to the check out assistant, then the purchaser makes an offer to buy the item. This principle was confirmed in 1953 when the Pharmaceutical Society of Great Britain tried to prevent Boots from putting non-prescription drugs on display in its stores. It was alleged that boots were illegally offering the drugs for sale without a pharmacist being present. Boots successfully argued that once customers reached the checkout a pharmacist was available. The court found that the drugs were not offered for sale merely by being displayed on a shelf - rather such display was an invitation to treat.[4]

At the point when the purchaser presents the item at the checkout and makes an offer he intends to form a binding contract upon acceptance of his offer by the checkout assistant. When the checkout assistant rings the item through the till this amounts to acceptance of the purchaser's offer to buy the item. Both parties intend to create legal relations, and there is a meeting of minds on the exchange of a certain sum in consideration for the purchase of the item. At this point, a binding contract, on those certain terms, is concluded.

The Argos web-site specifically stated that all orders were subject to e-mail confirmation by Argos. This equates to the till being rung and the contract concluded. With only a legally binding obligation of payment remaining to be fulfilled by the purchaser. It is this step which it is believed that Argos did not take with respect at least the bulk of the attempted orders for television sets.

Further arguments which are applicable to the Argos case are that there was no meeting of minds because Argos intended to sell the television sets at £299 and potential customers intended to buy the same for £2.99. The contract could equally be argued to have been void for uncertainty as the parties were at cross purposes.

Furthermore, in its defence Argos could have availed itself of case law[5] which allows a party to avoid contractual liability if it can prove that there was a mistake as to contractual terms and that the mistake was known to the other party. To successfully rely on this argument Argos would have needed to show that potential purchasers would have known that the £2.99 price displayed was a mistake. Equally those purchasers could argue in an age of sometimes strange and loss leading offers that they believed the price was genuine.

The Argos case and misleading pricing

Notwithstanding the above, there is a possibility that Argos would not be entirely "home and dry" on these points. Following the inevitable complaints from customers, the local Trading Standards office in Milton Keynes, where Argos is based, could potentially have prosecuted under its powers, using Part III of the Consumer Protection Act 1987. Section

4 Colby, Richard, When a snip turns out to be a slip-up, Guardian Unlimited Archive, 18 September 1999.
5 *Hartog v. Colin and Shields* [1939] All ER 566, and also see *Centrovincial Estates v. Merchant Investors Assurance* [1983] Com LR 158.



20(1) of the 1987 Act says:

"...a person shall be guilty of an offence if, in the course of any business of his, he gives (by any means whatever) to any consumers an indication which is misleading as to the price at which any goods, services, accommodation or facilities are available (whether generally or from particular persons)".

The Argos case finally settled out of court. The terms on which it was settled are not known.

The Electronic Commerce Directive[6]

This has nothing to say about English law's invitation to treat, but in Article 11 specifies that:

- the order and the acknowledgement of receipt are deemed to be received when the parties to whom they are addressed are able to access them.

The acknowledgement of receipt is the point at which the contract is formed and becomes binding in the English law example above where the web-site display is a mere invitation to treat and not an offer. However, if the web-site constituted an offer, a binding contract would be formed when the order is placed. However this Article 11 provision does not specify when the contract is formed and appears to leave this to the parties to specify and/or to national law and analysis of the mechanics of formation of contracts.

Best practice for the web-site operator: Lessons from the Argos case study

A trading web-site should be designed as an invitation to treat with an express notice that the prices for sale/purchase published thereon do not constitute offers. The placement of an order will only be accepted when confirmed by the site operator. Further disclaimers should also be included, including one to the effect that the site operator is entitled to withdraw from the contract in the event of obvious typographical or mathematical errors.

Whose terms will govern the contract?

If a party makes an offer, and in reply to that offer the recipient makes an offer in response on different terms the effect of the response is to reject the original offer and make a counter offer. This situation frequently arises and is known by lawyers as the "battle of the forms". The basic legal rule of thumb is that the last shot wins the battle. So that in the example above, if the recipient of the original offer, responds in different terms and then supplies goods, services or payment then such contract as is formed would be on his terms and not those originally offered by the original offeror. The original offeror may believe that it has contracted on its terms.

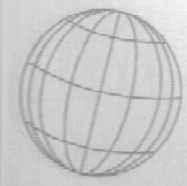
To avoid getting into this classic battle of the forms scenario in the first place the web-site operator should: (a) make it clear on the web-site that all contracts concluded thereon shall be on its terms; (b) force the user of the site to scroll through its terms and conditions and to be able to place an order or offer to sell only by clicking on a button which indicates that the user of the web-site agrees to the web-site operator's terms and conditions, which the user has read and understood.

Is EDI's contractual model worthy of adaptation to the Internet?

EDI (Electronic Data Interchange) is old fashioned e-business but still widely used. This technology is old but robust and reliable. Organisations such as the retailer British Home Stores have used it successfully for many years.[8] It requires dedicated hardware and software unlike the generic tools used for internet based e-business implementation. Traditionally a large purchaser would effectively force its key suppliers to use EDI to take advantage of the savings this offered. This too offered the possibilities for automated ordering and re-ordering of stock items and greater supply chain visibility from front to back. The large purchaser typically would also force all its EDI based suppliers to agree that all supplies were conducted on its predefined standard terms and conditions. Suppliers that would not sign up to these terms and conditions ceased to be suppliers. This had the benefit that all parties knew and were certain of the terms and conditions of all their supply contracts concluded by EDI.

This contractual model is just as attractive now using the new Internet based technology - as it

6 2000/31/EC of 8 June 2000
7 The Times, 9 September and 21 September 1999.
8 T102, Information Technology, Living with Technology, Open University Press.



was when EDI was in its infancy. Any business which presently uses EDI, but wishes to migrate those same processes to the more generic and flexible Internet based solutions would do well to preserve and or adapt the benefits of its EDI system, its supplier network and standard terms and conditions to the new medium. However, as with EDI this will only be viable where the site-operator has the market power to insist that its terms and conditions will apply.

Furthermore, there remains considerable interest in transplanting EDI whole into the Internet environment. An Internet Engineering Task Force has produced draft standards designed to provide full end to end security for Internet use of EDI.[9]

Online security

Encryption

In the process of encryption an algorithm is applied to the data which represents the message. This algorithm changes the values of the data according to the user's key. The message is then decrypted by the recipient who inputs a key and processes the encrypted information back into its original form by reversing the algorithm's effects.

Symmetric encryption systems employ the same key to encrypt and decrypt. This poses the practical difficulty of both sender and recipient having to know the same key - which makes maintaining secrecy of the key difficult. Sender and recipient are caught in the conundrum of sending the key by secure means in the first place. An unintended third party in possession of the key would be able to decrypt the message.

The solution to this conundrum is Asymmetric encryption systems which employ two pairs of keys. Such key pairs are comprised of one private and one public key. The intended recipient of the message communicates his public key to the intended sender. The message is encrypted by the sender using the public key which by analogy can be likened to snapping a padlock onto a container clasp. The sender does not have a key to open the document once encrypted. The recipient of the message is the only person who holds the private key to unlock the document. Or using the padlock analogy to remove the padlock, the recipient of the message i.e. the holder of the private key - uses that key to remove the padlocks which have been supplied to the public.

Digital or electronic signatures: (i) what are they? (ii) must online contracts be digitally signed?

(i) Electronic signatures suitable for e-business use are generally based upon public key Asymmetric encryption systems. The verification of identity by means of digital/electronic signatures is conceptually the inverse of Asymmetric public key encryption. Instead of the sender using the public key to encrypt and the recipient using the private key to decrypt, these roles are reversed. So that a private key is used to encrypt the signature so as to ensure the unique identity of the sender. Following the padlock analogy used above; in the creation of digital signatures it is the capability to create and lock the signature which is the function of the secret private key. This locked signature can only be opened by the sender's the public key and no-one else's. If the signature opens using the sender's public key then it must have been encrypted using the sender's unique secret private key.

Typically the sender uses software which creates a summary of the message to be sent which is known as a "Hash Function". This summary includes the vital statistics of the message. The summarised/hashed message is then encrypted with the sender's private key, this is the digital/electronic signature. The original message itself is not altered. The recipient then uses the sender's public key to decrypt the digital/electronic signature back into the summary of the message. That summary is then checked against the message itself to ensure that the message has not been altered. If they match exactly, then the recipient can be confident that the document has not been altered since the point in time when it was digitally signed.

However, this verification of the integrity of the message does not necessarily prove the identity of the sender. Rather it proves that the owner of the key sent the message, but crucially not who the owner is. The owner even if listed in a directory could have obtained the key under a false name. One solution to this problem is to

9 Dr. Hake, Roger OBE, BCS Technical Director et al, E-commerce - A World of Opportunity, The British Computer Society, July 1999, pp.32-3.



use an independent trusted third party (i.e. a Certification Authority) to verify the identity of the sender. The Certification Authority provides parties with electronic/digital certificates and encryption keys. If Certification Authorities are used then the recipient receives a certificate from the Certification Authority or from the sender. This certificate which is itself also digitally signed by the Certification Authority confirms the public key and name of the sender.

If the message itself is also confidential then it can be encrypted separately.

(ii) Contracts can come into being without writing in the offline world by means of an oral agreement (except for the sale of land and other specific exceptions). An example would be any purchase from any shop. There is usually no written contract, rather there is an oral contract. Contracts are formed when both parties intend them to do so and are in agreement as to their terms. Just as no formalities are required in the offline world, so too there is no legal requirement for a digital/electronic signature in order to form contracts online. For example a contract could be concluded by an exchange of unsecured e-mails without digital/electronic signatures.

Why use digital signatures then?

The general principle in the offline world is that:

"The essential requirement of signing is the affixing, either by writing with a pen or pencil or by otherwise impressing upon the document, one's name or 'signature' so as to personally authenticate the document"[10]

The hand-written signature is a distinctive affirmation that a unique individual has accepted the specific written terms of the contract and that the document itself is authentic. In practical terms a written as opposed to an oral contract is much easier to use in business as the written contract can be referred to in order to ascertain details of what has been agreed, when and by whom. Thus the signed, dated, written contract helps evidence its terms and that a specific person agreed to those terms on a specific date and that the document is authentic.

For the very same evidential reasons which apply to signed contracts in the offline world, digitally signed contracts are likely to be increasingly used for concluding contracts online.

English law was already flexible enough to allow the use of electronic signatures as evidence in Court. However, as a result of the Electronic Signatures Directive[11] The Electronic Communications Act 2000 has been created. Section 7[12] provides that:

(1) In any legal proceedings:- (a) an electronic signature incorporated into or logically associated with a particular electronic communication or particular electronic data, and (b) the certification by any person of such a signature, shall each be admissible in evidence in relation to any question as to the authenticity of the communication or data or as to the integrity of the communication or data. (2) For the purposes of this section an electronic signature is so much of anything in electronic form as:- (a) is incorporated into or otherwise logically associated with any electronic communication or electronic data; and (b) purports to be so incorporated or associated for the purpose of being used in establishing the authenticity of the communication or data, the integrity of the communication or data or both.

Any outstanding questions in relation to electronic signatures will affect the evidential weight a court affords to them, but not their acceptability as evidence.[13]

How does the Regulation of Investigatory Powers Act 2000[14] ("RIPA") affect use of encryption?

Part III of the RIPA ss.49-55 contain provisions which govern situations where, for example encrypted information has come into the hands of the authorities by lawful means, such as interception under RIPA. Section 49(2) empowers appropriate state authorities to serve a notice requiring disclosure of an

10 *Goodman v. J Eban* [1954] 1 All ER 763
11 99/93/EC
12 Which came into force on 25 July 2000 by virtue of SI 2000/1798.
13 See also: Conor Ward, Payment and security online, the e-commerce series, PLC, September 2000, pp.23-25; and York and Chia, Hammond Suddards' E-Commerce, Butterworths, 1999 pp.41-57.
14 See: www.hmso.gov.uk/acts/en/2000en23.htm, www.legislation.hmso.gov/acts/acts2000/20000023.htm and PLC, September 2000, pp.26-27.

encryption key on a person who is reasonably believed to be in possession of it. Section 49(3) lists the reasons for which such a notice shall be necessary as: (a) national security, (b) the prevention or detection of crime, and (c) for the economic wellbeing of the country.
A person in possession of a key and in receipt of a s.49 notice regarding that key has three choices: (i) provide the key; (ii) decrypt the material; or (iii) face criminal prosecution pursuant to s.53 and possible imprisonment for up to two years and or a fine. There may also be instances where only supply of the key to the authorities will suffice.

In certain circumstances under s.54 the recipient of the s.49 notice and others who may come to know of it may also be required to keep the notice secret. Breach of such a secrecy provision of a s.49 notice is also a criminal offence carrying a potential penalty of up to 5 years imprisonment and or a fine.

In practice, for engineering businesses these provisions could be applied to combat for example certain middle eastern states seeking to purchase large high pressure pipe sections online. If for example the security forces suspected a new "Super-Gun" type affair was underway and if they also suspected such orders were placed through an engineering procurement portal using strong encryption; then the key holder within that portal could find himself the recipient of a s.49 RIPA notice. Such a notice might well also include secrecy provisions pursuant to s.54.

In this scenario the portal should have in place defined procedures for the key holder to comply with the notice as expediently as practicable. Such a portal should know the answers to the legal questions before such circumstances ever arise. Similarly, so should any organisation whose infrastructure could potentially be used for money laundering, crime, fraud, or espionage.

Data Protection

What should an e-business do and or not do in order to comply with Data Protection laws?

Data protection means ensuring that personal data relating to an individual is processed according to law, in particular the principles established under the Data Protection Act 1984 (the "1984 Act") and further developed in the Data Protection Act 1998 (the "1998 Act").[15] All businesses who keep any records from which individual data subjects (persons) can be identified should notify the Data Protection Commissioner. This is broad enough to cover data which could be used to identify data subjects which is insufficient alone to render them identifiable, but which could none the less in combination with another source of data such as the electoral role render data subjects identifiable. A very useful selection of materials for guidance is available from: www.dataprotection.gov.uk[16] Data protection is a complex area, the full provisions of which are beyond the scope of this publication. The analysis below provides an overview of the main points. The regime created by the 1998 Act is based upon the following eight data protection principles:

1. *Personal data shall be processed fairly and lawfully and, in particular, shall not be processed unless:- (a) at least one of the conditions in schedule 2 is met;[17] (b) in the case of personal data, at least one of the conditions in schedule 3 is also met.[18]*
2. *Personal data shall be obtained only for one or more specified and lawful purposes and shall not be further processed in any manner incompatible with that purpose or other purposes.*
3. *Personal data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they are processed.*
4. *Personal data shall be accurate and where necessary, kept up to date.*
5. *Personal data processed for any purpose or purposes shall not be kept for longer than is necessary for that purpose or those purposes.*
6. *Personal data shall be processed in accordance with the rights of data subjects under this Act.*

15 This repealed the 1984 Act and seeks to implement the Data Protection Directive 95/46/EC
16 Also see: for the full text of legislation www.hmso.gov.uk/acts/acts1998/19980029.htm and further www.homeoffice.gov.uk/ccpd/ccpdhome.htm, www.open.gov.uk/dpr/dprhome.htm, www.bcs.org.uk/dataprot/dpc.htm and www.bcs.org.uk/iseb/index.html
17 Schedule 2 relates to any Personal Data and can be found at: http://www.hmso.gov.uk/acts/acts1998/80029—n.htm#sch2
18 Schedule 3 relates to any Sensitive Personal Data and can be found at: http://www.hmso.gov.uk/acts/acts1998/80029—o.htm



7. *Appropriate technical and organisational measures shall be taken against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or damage to, personal data.*
8. *Personal data shall not be transferred to a country or territory outside the EEA unless that country or territory ensures an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data.*

Offences under the 1998 Act

A data controller is liable if he or she

- Fails to notify processing of Personal Data, where required s.21(1)
- Fails to notify changes to processing of Personal Data s.21(2)
- Fails to comply with an Enforcement Notice s.47(1)
- Makes a statement in purported compliance with an information notice which he or she knows to be false or recklessly makes a statement which is false in a material respect s.47(2)
- Unlawfully obtains Personal Data s.55(3)
- Unlawfully sells Personal Data s.55(4)
- Unlawfully offers Personal Data for sale s.55(5)
- Unlawfully obtains Personal Data by requiring someone to exercise their Subject Access Rights in connection with employment or the provision of services s.56(5)
- Obstructs a person in the execution of a warrant, Schedule 9, 12(a)
- Fails without reasonable excuse to give any person executing such a warrant such assistance as he may reasonably require, Schedule 9, 12(b)

Directors' and Officers' liabilities

Furthermore the potential liabilities of Directors are dealt with in s.61. Where an offence has been committed by a company and is proved to have been committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or similar officer of the company, or any person who was purporting to act in such capacity, he as well as the company shall be guilty of an offence.[19]

Examples of prosecutions under the old DPA 1984

Most successful prosecutions to date have related to:

- Unregistered holding of Personal Data
- Using Personal Data for unregistered purposes

- Carrying on a computer bureau while being unregistered
- Failure to keep the registered address up-to-date

Directors' liability for such offences arises under s.20(1) of the old 1984 Act.

In addition to these, the offences of:
- Unauthorised procurement of Personal Data, and
- Sale, or offer for sale, of Personal Data

arise under the modifications to the 1984 Act by the Criminal Justice and Public Order Act 1994.[20]

What rights do data subjects have?

Data subjects have the Rights to:

- Information relating to the processing of their Personal Data
- access to their Personal Data
- prevent processing likely to cause damage or distress
- prevent processing for the purposes of Direct Marketing
- prevent decision making which relates to them by solely automatic means
- compensation for damage or distress arising from failure to comply with the Act
- Rectification, Blocking, erasure or Destruction of Personal Data where the same is inaccurate or contains an opinion which appears to be based upon inaccurate data

Main conclusions

- When contracting online set up your e-business web-site so that it does not constitute an offer, but an invitation to treat.

19 Dr. Barber, Barry FBCS et al The British Computer Society's Data Protection Committee, Data Protection - everybody's business, a practical guide for professionals and business managers, Optichrome The Printing Group, 1998 p.45-6.
20 Dr. Barber, Barry FBCS et al p.44.



- If you have the market power get would be traders using your b2b e-business web-site to sign up to your standard terms and conditions in return for allowing them to use the site. Within those terms and conditions specify that English law shall govern the contract. Also force the user of the site to scroll through those terms and conditions and click on a button to confirm acceptance of them to ensure they are incorporated into the contract.

- Cross jurisdictional issues are a fact of online life, be prepared for the risks. It may not be possible to foresee every possible risk. However, legal advice could go some considerable way towards clarifying the likely scenarios which may be encountered. These jurisdiction issues are governed by the Lugano and Brussels conventions.

- Signatures, writing (except for special contracts such as the sale of land), digital and or electronic signatures are not necessary to make a contract binding in English law.

- Encryption is a useful tool and Asymmetric encryption systems overcome many of the problems of Symmetric encryption. Asymmetric encryption systems are also employed in creating digital signatures.

- Digital signatures offer similar evidential and authentication benefits to those provided by hand-written signatures.

- The RIPA has big teeth, if your organisation uses or will use encryption then ensure that it will be in a position to comply with any s.49 RIPA Notice which may be received. There are 3 possible outcomes to a s.49 notice: (a) provision of the key to the authorities, (b) decryption of the message(s) in question for the authorities by the key holder, and or (c) prosecution of the key holder.

- The Data Protection Commissioner must be notified of your business use of Personal Data. Such data processing as carried out by your organisation should comply with the full terms of the 1998 Act and its eight data protection principles. There are numerous offences under the 1998 Act for which organisations and their company directors, data controllers and other officers can be prosecuted.

- The me-commerce example shows how, in a favourable regulatory climate the UK's me-commerce technology has flourished and now exceeds that available in the USA. This gives great cause for optimism for the UK's online future. However, it would be folly to underestimate the great upheavals ahead, as e-business and me-business change the way that the UK conducts business.

- The fundamental conclusion is that whilst e-business offers considerable scope for reducing costs and adding value it also poses new challenges. Many of these challenges are a mixture of technological and legal practicalities. Neither should be viewed in isolation and both should be seen in the context of the business which the solutions are created to serve. Serving that business should remain the key objective which should not be lost sight of.

Further Information

Sources of further and original information are contained in the footnotes to this chapter. Additional sources of further assistance and information are contained in the final section of this publication.

Mark Taylor's and other mission delegates' contact details and those of the businesses visited in the USA are also listed toward the end of this publication.

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10. B2b e-business procurement: e-marketplaces and competition law

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Introduction

Over the past two years, new business to business ("b2b") e-marketplaces have been announced almost daily. They now cover almost every significant major industry. These b2b e-marketplaces are extremely diverse in terms of their membership, the services that they provide, their ownership structures and their organisation. Just as business-to-business commerce already assumes many forms in the offline world, the same is also true in the online world.

The first-generation e-marketplaces were primarily exchanges established by independent operators, which excluded equity participation by buyers and sellers in order to preserve neutrality. Such internet exchanges first appeared in industries with homogenous products such as chemicals, energy, telecommunications and electronic components. This type of independent internet exchange raises few, if any, competition law concerns.

More recently, however, buyers and sellers within a particular industry have announced plans to group together to create their own industry-wide marketplaces. Clearly, such competitor collaboration has far greater potential to raise competition law concerns. Examples of such industry-led marketplaces include:

- **Covisint:** a joint venture between General Motors, Ford, Daimler Chrysler, Renault and Nissan which is an e-marketplace for the supply of auto-components;
- **e2open.com:** an exchange including IBM, Hitachi, Matsushita, LG Electronics, Nortel Networks, Seagate Technology, Solectron and Toshiba to buy and sell computer, electronic and telecommunications products; and
- **Transora:** an e-marketplace in the food, beverage and consumer products sector, created by 50 companies including Coca-Cola, General Mills, Kraft Foods, Proctor & Gamble and Unilever.

UK and EU position

For companies operating in the UK the relevant competition provisions can be found in the Competition Act 1998 (the "CA") which came into effect in March 2000. It applies to agreements and practices the effects of which are felt mainly in the UK. The CA incorporates the Article 81 and 82 EC Treaty prohibitions into domestic UK law referred to respectively as the Chapter I and Chapter II prohibitions. The CA requires UK authorities to ensure that there is no inconsistency with the principles of European competition rules.

Chapter I

Chapter I of the CA prohibits all agreements between undertakings that have as their object or effect the prevention, restriction or distortion of competition, which may affect trade within the UK or a part thereof. This covers, in particular, concerted practices involving price-fixing and market sharing.

Chapter II

Chapter II prohibits any abuse of a dominant position by one or more undertakings on the relevant market.

Dominance

Dominance will always depend on the definition of the relevant geographic and product markets. Where a company has a market share of 40% or more there is a risk of dominance being found to exist. Unsurprisingly organisations which find themselves under regulatory scrutiny seek to define their markets widely. By doing so they may be able to show that whilst they supply 50% of all of sales of product X in the UK, that consumers actually can use either products X, Y or Z to the same effect. Consequently they may be able to



establish the relevant market as being that for products X, Y and Z, thereby taking the organisation's share of the relevant market below the 40% threshold - and the organisation out of the danger zone.

Again unsurprisingly the victims of an alleged abuse of a dominant position such as a smaller competitor may well argue that the relevant market is narrower and indeed confined to product X.

Abuse

Imposition of unfair purchase or selling prices, limiting or refusing to supply or attaching additional conditions to contracts that such organisations would otherwise not be able to apply may all constitute an abuse of a dominant position.

Precautions

Any organisation of significant scale would be well advised to consult economists and lawyers before taking any action which could constitute an abuse of a dominant position! Likewise advice should be sought before entering any exclusive or otherwise prohibited agreements.

Jurisdiction

Where there is an appreciable effect on trade between Member States of the EU Articles 81 and 82 of the EC Treaty will be the applicable provisions. Where, for example, companies enter agreements which prevent, restrict or distort competition they risk being caught by the Article 81 prohibition. Such companies will then have to obtain an exemption for their agreement from the European Commission. Many agreements which could fall into this category are covered by block exemptions. For example, with respect to agreements relating to intellectual property. Any organisation with agreements which may be caught should seek specialist legal advice as this is a complicated area which is beyond the scope of this report. The European Commission has broad enforcement powers in terms of both Article 81 and 82 prohibitions, with the power to impose fines of up to 10% of company turnover worldwide. In addition agreements which infringe the Article 81 prohibition are void and unenforceable as between the parties, and expose the parties to a risk of third party actions for damages in respect of any loss incurred as a result of the infringement.

Agreements

Agreements between undertakings fall for consideration under Article 81 of the EC Treaty and the Chapter I prohibition in the Competition Act. In EU competition law terms, such agreements are generally distinguished as either being vertical or horizontal. Vertical agreements are agreements (or concerted practices) between companies at different stages in the supply chain, the best example being distribution agreements between supplier and retailer. Horizontal agreements, are those agreements (or concerted practices) between companies operating at the same level in the market, i.e. who are effectively competitors.

The European Commission's rules and accompanying guidelines on vertical agreements do not deal specifically with e-commerce. As a general rule, however, a supplier cannot restrict its distributors from using the Internet to advertise and sell its products. However there are two important exceptions. Firstly, a restriction may be imposed on the use of the Internet where the promotion of e-sales would lead to active selling into another distributor's territory or customer group. So, for example, the Belgian distributor of a UK-based company's products can be prevented from "actively" selling into France. However, the supplier can not prevent the Belgian distributor from selling to a French customer who solicits the goods via the distributor's web-site. Such sales are described as "passive" sales. Secondly, if objectively justified, a supplier may always place conditions on the sale of its product through a distributor's web-site, just as he may impose quality standards for a shop or for advertising and promotion in general.

In contrast to vertical agreements along the supply chain, b2b marketplaces are usually horizontal in nature. In other words, they usually involve forms of co-operation between competitors operating at the same level in their respective supply chains.

The perceived danger of b2b exchanges

The pace of development of this kind of on-line b2b exchange has taken the regulatory authorities by surprise. The main competition concern is that such exchanges may operate as disguised cartels in which competitors can co-ordinate their market behaviour, by dividing markets, and sharing information on price and



other sensitive matters. Many such exchanges are joint ventures that would normally be illegal under the competition rules. The European Commission has recently created a team of officials specifically to deal with the mounting number of notifications of b2b exchanges.

Where such a joint venture (the "JV") is to operate as a separate and autonomous legal entity from its parents, notification of the JV agreement may be required under the Merger Control Regulation if the JV has a "Community Dimension" (i.e. the turnover thresholds contained in the Regulation are met). Where the JV is not to operate as a separate and autonomous legal entity the agreement may still have to be notified to the European Commission under Article 81 of the EC Treaty if there is a potential effect on trade between Member States. Where the effects are likely to be purely domestic similar procedures are applied by the UK competition authorities.

Routes to exemption

To benefit from exemption from the Article 81 prohibition the JV parent companies must show that the exchange will be pro-competitive and that any restrictions on competition inherent within it are necessary to make the arrangement work. Moreover, it must also be shown that the efficiencies gained by use of the new marketplace will be passed on to consumers.

In a recent European Commission decision on the creation of Volbroker.com (a JV e-marketplace set up by six major banks to provide brokerage services for automated trading in foreign currency exchange options) the Commission also required that: (i) the marketplace be open to other competitors and (ii) requested guarantees that sensitive market information would not be passed between members. It is likely that these kinds of conditions will be applied more forcefully where the marketplace will result in a significant degree of market concentration.

US and EU anti-trust / competition policy on e-marketplaces

At present, both the USA's Federal Trade Commission (the "FTC") and the EU's European Commission (the "Commission") are very much still in a learning phase as regards the potential competition law implications of business to business electronic marketplaces. Neither institution has issued formal guidance dealing specifically with these issues. However, the FTC, in particular has stated that it would be premature to do so, given that b2b e-marketplaces are a phenomenon which is still developing. Having said that both, the FTC and the Commission have made statements concerning competition policy and b2b e-marketplaces. A summary of their current thinking and those statements are set out below.

Anti-trust Analysis of b2b e-marketplaces

The FTC has recently stated that the anti-trust issues that will be relevant will vary depending on a number of factors including: (i) how specific marketplaces are organised, (ii) the extent and types of information exchanged, (iii) whether the marketplace involves joint selling or joint purchasing, and (iv) whether there are multiple b2b e-marketplaces in the relevant market.

In carrying out its anti-trust analysis of an e-marketplace the FTC will use the general rules contained in its "Antitrust Guidelines for Collaborations among Competitors"[1] which were issued by the FTC and the US Department of Justice in April 2000.

"Per se" Illegality and the "Rule of Reason"

The guidelines provide for two types of analysis of agreements between competitors under US anti-trust rules. Certain types of agreement are "per se" illegal if they are likely to harm competition and to have no significant pro competitive benefit. Examples include agreements among competitors to fix prices or output, rig bids, or share or divide markets by allocating customers, suppliers or territories. Agreements which are not "per se" illegal are evaluated under the so-called "rule of reason", which requires analysis of the overall competitive effect of an agreement. Such analysis requires consideration of both (i) possible anti-competitive harm and (ii) the potential pro-competitive benefits of an agreement. If an investigation indicates anti-competitive harm, the enforcement agencies

1 United States Department of Justice and Federal Trade Commission, Guidelines for Collaborations Among Competitors (7 April 2000) reprinted in 4 Trade Reg. Rep (CCH) 3,160.



examine whether the relevant agreement is reasonably necessary to achieve pro-competitive benefits that are likely to off-set such harm.

Application of the Rule of Reason to b2b E-Marketplaces

Agreements between competitors establishing b2b e-marketplaces are most likely to be assessed under the "rule of reason". It is, therefore, necessary to consider both any anti-competitive harm which may arise from such b2b agreements as well as the potential pro-competitive benefits.

Potential Anti-Competitive Harm

The following types of joint conduct have been identified as having the potential to raise anti-trust issues:

Joint Marketing and Purchasing

One of the first questions is whether a particular b2b e-marketplace involves joint selling or joint purchasing. If it does, the general principles contained in the Guidelines (referred to above) will apply. It is recognised that joint purchasing and joint selling arrangements may in certain circumstances, be pro-competitive but that they may result in anti-competitive harm where they create, increase or facilitate the exercise of market power.

Information Exchange

The FTC has stated that b2b e-marketplaces have the potential to raise issues regarding information sharing. Previous FTC experience has shown that information-sharing using modern information technology can facilitate complex collusion practices among competitors. Of particular concern is the sharing of information relating to price, output, costs or strategic planning.

Much depends on how b2b e-marketplaces are structured. For example, the use of "firewalls" or other devices to limit the exchange of competitively significant information may solve any potential problems in this area.

Membership

With regard to membership, the FTC has two distinct concerns: (i) **exclusion:** which involves restrictions permitting only select businesses to participate in a given b2b marketplace; and (ii) **exclusivity:** which involves rules prohibiting firms that do participate in a given marketplace from joining other b2b e-marketplaces or sending them too much business, including exclusive purchasing and minimum purchasing requirements.

The FTC's analysis will focus upon whether denial of membership significantly raises rivals' costs by either denying completely or limiting access to a key market input point and, if so, whether this is likely to harm competition downstream. Only exclusionary conduct that harms competition rather than harming the excluded competitor alone would be challenged. Relevant factors to be taken into account include, for example, whether or not the excluded firm could readily form or join an alternative e-marketplace, or whether conversely participation in an e-marketplace as a customer is in fact necessary for acquiring comparably-priced inputs.

Network Effects

With regard to network effects, the focus shifts from the markets for the goods bought and sold through b2b e-marketplaces, to the market for marketplaces themselves. If one or a few e-marketplaces were to grow so large as to crowd out all others, it may attract the FTC's attention, although the FTC recognises that there may be legitimate reasons for such consolidation, and that certain markets may not efficiently support more than one b2b e-marketplace.

Potential Pro-Competitive Benefits

With regard to the potential pro-competitive benefits of e-marketplaces, the FTC recognises the significant potential of b2b e-marketplaces to create efficiencies, particularly in terms of reduced transaction costs, and their ability to create substantial productivity-increasing effects, which may ultimately lead to lower prices and greater innovation for consumers.



The FTC in action: Covisint

Covisint is a b2b e-marketplace for automotive manufacturers to source their components. It has been created by General Motors Corporation, Ford Motor Corporation, Daimler Chrysler AG, Renault SA, and Nisan Motor Co. Ltd plus two IT solutions providers: CommerceOne Inc and Oracle Corporation.

At the time of the Engineering Council Industry Affiliate's e-business mission to the USA - Covisint were unable to comment in any detail about the FTC scrutiny which they were under. Indeed some members of the Covisint team at Ford had been subjected to a dawn raid by the authorities in search of evidence. Clearly the US authorities take their role very seriously indeed.

After the Mission returned to the UK Covisint was informed that the FTC had closed its investigation on 11 September 2000. In its notification the FTC indicated its reasoning in the following terms:

"...because Covisint is in the early stages of its development and has not yet adopted bylaws, operating rules, or terms for participant access, because it is not yet operational, and because its founders represent such a large share of the automobile market, the FTC cannot say that implementation of the Covisint venture will not cause competitive concerns. In view of this, the FTC reserved the right to take such further action as the public interest may require".

FTC Chairman Robert Pitofsky has also stated:

"As we learned at the FTC's workshop in June, b2b electronic marketplaces offer great promise as means through which significant cost savings can be achieved, business processes can be more efficiently organised, and competition may be enhanced. B2bs have a great potential to benefit both businesses and consumers through increased productivity and lower prices. Of course, as is the case with any joint venture, whether in the traditional or new economy, b2bs should be organised and implemented in ways that maintain competition. The antitrust analysis of an individual b2b will be specific to its mission, its structure, its particular market circumstances, procedures and rules for organisation and operation, and actual operations and market performance".[2]

So what does all this mean in practice? The answer seems to be that Covisint can go ahead for now whilst the FTC operates a suck-it-and-see approach. What it also means is that Covisint is by no means in the clear.

If the FTC subsequently takes the view that Covisint is having a detrimental effect upon the public interest (i.e. competition) then it could still be broken up or ordered to change its behaviour in the marketplace as has recently happened to the mighty Microsoft.

Covisint could face further dawn raids and court action in the medium and longer term. Whether or not it does will depend to a large extent upon how it behaves in the marketplace and the quality and uptake of its legal advice.

The FTC's decision keeps its options open and is wise in giving Covisint the chance to deliver real benefits to consumers or fail to do so as the case may be. This will continue to be an interesting venture to watch for lawyers and industrialists for some time to come.

EC competition policy

Like the FTC, the Commission is only just beginning to grapple with the potential competition law challenges posed by the rapid emergence of industry-led b2b e-marketplaces. The Commission has created a new specialist team of officials specifically to co-ordinate its response to the growing number of b2b e-marketplaces being set up by industrial companies. The team will act as an "entry point" to the Commission for b2b e-marketplaces and is designed to ensure that a consistent approach is taken between different parts of the competition directorate. The Commission's policy in relation to b2b e-marketplaces is expected to be positive. A spokeswoman was recently quoted as saying:

"In the sense that they appear pro-competitive, increase transparency and give significant cost-efficiencies, they could have the effect of bringing prices down and be good for the economy in general".

However, she also indicated that officials would look closely at the fine print of agreements to ensure that companies were not using them to run disguised cartels.

2 US Federal Trade Commission; http://www.ftc.gov/opa/2000/09/covisint.htm



Applicable law

B2b e-marketplaces may be notified to the Commission under either the European Merger Control Regulation ("EMCR"), or Regulation 17, which implements Article 81 of the EC Treaty, depending on how they are structured. The EMCR applies to so-called "full-function" joint ventures. A full-function joint venture involves the creation of a new company with all the assets necessary to play a durable, distinct and identifiable role on the market. Such a joint venture will be appraised under the substantive test contained in the EMCR (i.e. whether or not it creates or strengthens a dominant position as a result of which effective competition would be significantly impeded in the common market or a substantial part thereof).

Furthermore any co-ordination aspects of the joint venture will be assessed in accordance with Article 81 of the EC Treaty, which prohibits agreements which have as their object or effect the prevention, restriction or distortion of competition and which may affect trade between Member States. Industry-led b2b e-marketplaces are very likely to raise just such additional issues of co-ordination between the participants. Such additional co-ordination issues will be appraised under Article 81 of the EC Treaty, even if notified to the Merger Task Force in the context of the EMCR. In practical terms: industry led b2b e-marketplaces may have to negotiate their way through both sets of rules under the EMCR and Article 81.

Recent Decisions

The European Commission has already approved some e-business joint ventures. For example, "e-maro" an electronic trading platform for the supply of office equipment was notified to it under the EMCR by Deutsche Bank and SAP, a software company. This transaction did not raise any competition concerns because the activities of the two parent companies do not overlap in any of the relevant markets.[3] Another example is "Volbroker.com", an electronic brokerage joint venture between six major banks, which was notified to the Commission under Regulation 17. The joint venture was approved only after the participants had provided various assurances to the Commission that adequate safeguards would be put in place to avoid the exchange of commercially sensitive information.4

Competition Analysis Under Article 81

Like the FTC, the Commission will apply established principles of competition law to the emerging b2b e-marketplaces. The principles for the assessment of horizontal co-operation are contained in draft Guidelines published by the Commission in April 2000 and due to be adopted by the end of the year.[5] The Guidelines recognise that co-operation between competitors may produce certain benefits such as cost savings, greater efficiency and faster innovation. It may also raise competition problems, particularly if it enables parties to maintain, gain or increase market power.

The first step in any competition law analysis will therefore be to establish the position of the parties in the markets affected by the co-operation. If the combined market share and position of the parties are strong then Article 81 is likely to apply to any potential anti-competitive effects of the e-marketplace, such as those described above.

If an infringement of Article 81 is identified, then an analysis of the economic benefits of the co-operation will be required for the purposes of applying Article 81(3). In carrying out such analysis the Commission will apply existing principles of competition law, including notably, those contained in its draft Guidelines on horizontal co-operation.

Conclusions

To summarise, a number of preliminary conclusions may be drawn regarding the application of competition policy to e-marketplaces. These are as follows:

- Both the FTC and the Commission are still very much in the "learning phase" with regard to e-marketplaces.
- B2b e-marketplaces offer many pro-competitive benefits, but also possibly raise serious competition law concerns.

3 Press Release IP/00/783; 14 July 2000.



20(1) of the 1987 Act says:

"...a person shall be guilty of an offence if, in the course of any business of his, he gives (by any means whatever) to any consumers an indication which is misleading as to the price at which any goods, services, accommodation or facilities are available (whether generally or from particular persons)".

The Argos case finally settled out of court. The terms on which it was settled are not known.

The Electronic Commerce Directive[6]

This has nothing to say about English law's invitation to treat, but in Article 11 specifies that:

- the order and the acknowledgement of receipt are deemed to be received when the parties to whom they are addressed are able to access them.

The acknowledgement of receipt is the point at which the contract is formed and becomes binding in the English law example above where the web-site display is a mere invitation to treat and not an offer. However, if the web-site constituted an offer, a binding contract would be formed when the order is placed. However this Article 11 provision does not specify when the contract is formed and appears to leave this to the parties to specify and/or to national law and analysis of the mechanics of formation of contracts.

Best practice for the web-site operator: Lessons from the Argos case study

A trading web-site should be designed as an invitation to treat with an express notice that the prices for sale/purchase published thereon do not constitute offers. The placement of an order will only be accepted when confirmed by the site operator. Further disclaimers should also be included, including one to the effect that the site operator is entitled to withdraw from the contract in the event of obvious typographical or mathematical errors.

Whose terms will govern the contract?

If a party makes an offer, and in reply to that offer the recipient makes an offer in response on different terms the effect of the response is to reject the original offer and make a counter offer. This situation frequently arises and is known by lawyers as the "battle of the forms". The basic legal rule of thumb is that the last shot wins the battle. So that in the example above, if the recipient of the original offer, responds in different terms and then supplies goods, services or payment then such contract as is formed would be on his terms and not those originally offered by the original offeror. The original offeror may believe that it has contracted on its terms.

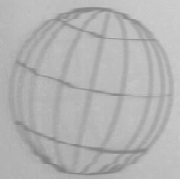
To avoid getting into this classic battle of the forms scenario in the first place the web-site operator should: (a) make it clear on the web-site that all contracts concluded thereon shall be on its terms; (b) force the user of the site to scroll through its terms and conditions and to be able to place an order or offer to sell only by clicking on a button which indicates that the user of the web-site agrees to the web-site operator's terms and conditions, which the user has read and understood.

Is EDI's contractual model worthy of adaptation to the Internet?

EDI (Electronic Data Interchange) is old fashioned e-business but still widely used. This technology is old but robust and reliable. Organisations such as the retailer British Home Stores have used it successfully for many years.[8] It requires dedicated hardware and software unlike the generic tools used for internet based e-business implementation. Traditionally a large purchaser would effectively force its key suppliers to use EDI to take advantage of the savings this offered. This too offered the possibilities for automated ordering and re-ordering of stock items and greater supply chain visibility from front to back. The large purchaser typically would also force all its EDI based suppliers to agree that all supplies were conducted on its predefined standard terms and conditions. Suppliers that would not sign up to these terms and conditions ceased to be suppliers. This had the benefit that all parties knew and were certain of the terms and conditions of all their supply contracts concluded by EDI.

This contractual model is just as attractive now using the new Internet based technology - as it

6 2000/31/EC of 8 June 2000
7 The Times, 9 September and 21 September 1999.
8 T102, Information Technology, Living with Technology, Open University Press.



was when EDI was in its infancy. Any business which presently uses EDI, but wishes to migrate those same processes to the more generic and flexible Internet based solutions would do well to preserve and or adapt the benefits of its EDI system, its supplier network and standard terms and conditions to the new medium. However, as with EDI this will only be viable where the site-operator has the market power to insist that its terms and conditions will apply.

Furthermore, there remains considerable interest in transplanting EDI whole into the Internet environment. An Internet Engineering Task Force has produced draft standards designed to provide full end to end security for Internet use of EDI.[9]

Online security

Encryption

In the process of encryption an algorithm is applied to the data which represents the message. This algorithm changes the values of the data according to the user's key. The message is then decrypted by the recipient who inputs a key and processes the encrypted information back into its original form by reversing the algorithm's effects.

Symmetric encryption systems employ the same key to encrypt and decrypt. This poses the practical difficulty of both sender and recipient having to know the same key - which makes maintaining secrecy of the key difficult. Sender and recipient are caught in the conundrum of sending the key by secure means in the first place. An unintended third party in possession of the key would be able to decrypt the message.

The solution to this conundrum is Asymmetric encryption systems which employ two pairs of keys. Such key pairs are comprised of one private and one public key. The intended recipient of the message communicates his public key to the intended sender. The message is encrypted by the sender using the public key which by analogy can be likened to snapping a padlock onto a container clasp. The sender does not have a key to open the document once encrypted. The recipient of the message is the only person who holds the private key to unlock the document. Or using the padlock analogy to remove the padlock, the recipient of the message i.e. the holder of the private key - uses that key to remove the padlocks which have been supplied to the public.

Digital or electronic signatures: (i) what are they? (ii) must online contracts be digitally signed?

(i) Electronic signatures suitable for e-business use are generally based upon public key Asymmetric encryption systems. The verification of identity by means of digital/electronic signatures is conceptually the inverse of Asymmetric public key encryption. Instead of the sender using the public key to encrypt and the recipient using the private key to decrypt, these roles are reversed. So that a private key is used to encrypt the signature so as to ensure the unique identity of the sender. Following the padlock analogy used above; in the creation of digital signatures it is the capability to create and lock the signature which is the function of the secret private key. This locked signature can only be opened by the sender's the public key and no-one else's. If the signature opens using the sender's public key then it must have been encrypted using the sender's unique secret private key.

Typically the sender uses software which creates a summary of the message to be sent which is known as a "Hash Function". This summary includes the vital statistics of the message. The summarised/hashed message is then encrypted with the sender's private key, this is the digital/electronic signature. The original message itself is not altered. The recipient then uses the sender's public key to decrypt the digital/electronic signature back into the summary of the message. That summary is then checked against the message itself to ensure that the message has not been altered. If they match exactly, then the recipient can be confident that the document has not been altered since the point in time when it was digitally signed.

However, this verification of the integrity of the message does not necessarily prove the identity of the sender. Rather it proves that the owner of the key sent the message, but crucially not who the owner is. The owner even if listed in a directory could have obtained the key under a false name. One solution to this problem is to

9 Dr. Hake, Roger OBE, BCS Technical Director et al, E-commerce - A World of Opportunity, The British Computer Society, July 1999, pp.32-3.



use an independent trusted third party (i.e. a Certification Authority) to verify the identity of the sender. The Certification Authority provides parties with electronic/digital certificates and encryption keys. If Certification Authorities are used then the recipient receives a certificate from the Certification Authority or from the sender. This certificate which is itself also digitally signed by the Certification Authority confirms the public key and name of the sender.

If the message itself is also confidential then it can be encrypted separately.

(ii) Contracts can come into being without writing in the offline world by means of an oral agreement (except for the sale of land and other specific exceptions). An example would be any purchase from any shop. There is usually no written contract, rather there is an oral contract. Contracts are formed when both parties intend them to do so and are in agreement as to their terms. Just as no formalities are required in the offline world, so too there is no legal requirement for a digital/electronic signature in order to form contracts online. For example a contract could be concluded by an exchange of unsecured e-mails without digital/electronic signatures.

Why use digital signatures then?

The general principle in the offline world is that:

"The essential requirement of signing is the affixing, either by writing with a pen or pencil or by otherwise impressing upon the document, one's name or 'signature' so as to personally authenticate the document"[10]

The hand-written signature is a distinctive affirmation that a unique individual has accepted the specific written terms of the contract and that the document itself is authentic. In practical terms a written as opposed to an oral contract is much easier to use in business as the written contract can be referred to in order to ascertain details of what has been agreed, when and by whom. Thus the signed, dated, written contract helps evidence its terms and that a specific person agreed to those terms on a specific date and that the document is authentic.

For the very same evidential reasons which apply to signed contracts in the offline world, digitally signed contracts are likely to be increasingly used for concluding contracts online.

English law was already flexible enough to allow the use of electronic signatures as evidence in Court. However, as a result of the Electronic Signatures Directive[11] The Electronic Communications Act 2000 has been created. Section 7[12] provides that:

(1) In any legal proceedings:- (a) an electronic signature incorporated into or logically associated with a particular electronic communication or particular electronic data, and (b) the certification by any person of such a signature, shall each be admissible in evidence in relation to any question as to the authenticity of the communication or data or as to the integrity of the communication or data. (2) For the purposes of this section an electronic signature is so much of anything in electronic form as:- (a) is incorporated into or otherwise logically associated with any electronic communication or electronic data; and (b) purports to be so incorporated or associated for the purpose of being used in establishing the authenticity of the communication or data, the integrity of the communication or data or both.

Any outstanding questions in relation to electronic signatures will affect the evidential weight a court affords to them, but not their acceptability as evidence.[13]

How does the Regulation of Investigatory Powers Act 2000[14] ("RIPA") affect use of encryption?

Part III of the RIPA ss.49-55 contain provisions which govern situations where, for example encrypted information has come into the hands of the authorities by lawful means, such as interception under RIPA. Section 49(2) empowers appropriate state authorities to serve a notice requiring disclosure of an

10 *Goodman v. J Eban* [1954] 1 All ER 763
11 99/93/EC
12 Which came into force on 25 July 2000 by virtue of SI 2000/1798.
13 See also: Conor Ward, Payment and security online, the e-commerce series, PLC, September 2000, pp.23-25; and York and Chia, Hammond Suddards' E-Commerce, Butterworths, 1999 pp.41-57.
14 See: www.hmso.gov.uk/acts/en/2000en23.htm, www.legislation.hmso.gov/acts/acts2000/20000023.htm and PLC, September 2000, pp.26-27.



encryption key on a person who is reasonably believed to be in possession of it. Section 49(3) lists the reasons for which such a notice shall be necessary as: (a) national security, (b) the prevention or detection of crime, and (c) for the economic wellbeing of the country.
A person in possession of a key and in receipt of a s.49 notice regarding that key has three choices: (i) provide the key; (ii) decrypt the material; or (iii) face criminal prosecution pursuant to s.53 and possible imprisonment for up to two years and or a fine. There may also be instances where only supply of the key to the authorities will suffice.

In certain circumstances under s.54 the recipient of the s.49 notice and others who may come to know of it may also be required to keep the notice secret. Breach of such a secrecy provision of a s.49 notice is also a criminal offence carrying a potential penalty of up to 5 years imprisonment and or a fine.

In practice, for engineering businesses these provisions could be applied to combat for example certain middle eastern states seeking to purchase large high pressure pipe sections online. If for example the security forces suspected a new "Super-Gun" type affair was underway and if they also suspected such orders were placed through an engineering procurement portal using strong encryption; then the key holder within that portal could find himself the recipient of a s.49 RIPA notice. Such a notice might well also include secrecy provisions pursuant to s.54.

In this scenario the portal should have in place defined procedures for the key holder to comply with the notice as expediently as practicable. Such a portal should know the answers to the legal questions before such circumstances ever arise. Similarly, so should any organisation whose infrastructure could potentially be used for money laundering, crime, fraud, or espionage.

Data Protection

What should an e-business do and or not do in order to comply with Data Protection laws?

Data protection means ensuring that personal data relating to an individual is processed according to law, in particular the principles established under the Data Protection Act 1984 (the "1984 Act") and further developed in the Data Protection Act 1998 (the "1998 Act").[15] All businesses who keep any records from which individual data subjects (persons) can be identified should notify the Data Protection Commissioner. This is broad enough to cover data which could be used to identify data subjects which is insufficient alone to render them identifiable, but which could none the less in combination with another source of data such as the electoral role render data subjects identifiable. A very useful selection of materials for guidance is available from: www.dataprotection.gov.uk[16] Data protection is a complex area, the full provisions of which are beyond the scope of this publication. The analysis below provides an overview of the main points. The regime created by the 1998 Act is based upon the following eight data protection principles:

1. *Personal data shall be processed fairly and lawfully and, in particular, shall not be processed unless:- (a) at least one of the conditions in schedule 2 is met;[17] (b) in the case of personal data, at least one of the conditions in schedule 3 is also met.[18]*
2. *Personal data shall be obtained only for one or more specified and lawful purposes and shall not be further processed in any manner incompatible with that purpose or other purposes.*
3. *Personal data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they are processed.*
4. *Personal data shall be accurate and where necessary, kept up to date.*
5. *Personal data processed for any purpose or purposes shall not be kept for longer than is necessary for that purpose or those purposes.*
6. *Personal data shall be processed in accordance with the rights of data subjects under this Act.*

15 This repealed the 1984 Act and seeks to implement the Data Protection Directive 95/46/EC
16 Also see: for the full text of legislation www.hmso.gov.uk/acts/acts1998/19980029.htm and further www.homeoffice.gov.uk/ccpd/ccpdhome.htm, www.open.gov.uk/dpr/dprhome.htm, www.bcs.org.uk/dataprot/dpc.htm and www.bcs.org.uk/iseb/index.html
17 Schedule 2 relates to any Personal Data and can be found at: http://www.hmso.gov.uk/acts/acts1998/80029—n.htm#sch2
18 Schedule 3 relates to any Sensitive Personal Data and can be found at: http://www.hmso.gov.uk/acts/acts1998/80029—o.htm



7. *Appropriate technical and organisational measures shall be taken against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or damage to, personal data.*
8. *Personal data shall not be transferred to a country or territory outside the EEA unless that country or territory ensures an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data.*

Offences under the 1998 Act

A data controller is liable if he or she

- Fails to notify processing of Personal Data, where required s.21(1)
- Fails to notify changes to processing of Personal Data s.21(2)
- Fails to comply with an Enforcement Notice s.47(1)
- Makes a statement in purported compliance with an information notice which he or she knows to be false or recklessly makes a statement which is false in a material respect s.47(2)
- Unlawfully obtains Personal Data s.55(3)
- Unlawfully sells Personal Data s.55(4)
- Unlawfully offers Personal Data for sale s.55(5)
- Unlawfully obtains Personal Data by requiring someone to exercise their Subject Access Rights in connection with employment or the provision of services s.56(5)
- Obstructs a person in the execution of a warrant, Schedule 9, 12(a)
- Fails without reasonable excuse to give any person executing such a warrant such assistance as he may reasonably require, Schedule 9, 12(b)

Directors' and Officers' liabilities

Furthermore the potential liabilities of Directors are dealt with in s.61. Where an offence has been committed by a company and is proved to have been committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or similar officer of the company, or any person who was purporting to act in such capacity, he as well as the company shall be guilty of an offence.[19]

Examples of prosecutions under the old DPA 1984

Most successful prosecutions to date have related to:

- Unregistered holding of Personal Data
- Using Personal Data for unregistered purposes

- Carrying on a computer bureau while being unregistered
- Failure to keep the registered address up-to-date

Directors' liability for such offences arises under s.20(1) of the old 1984 Act.

In addition to these, the offences of:
- Unauthorised procurement of Personal Data, and
- Sale, or offer for sale, of Personal Data

arise under the modifications to the 1984 Act by the Criminal Justice and Public Order Act 1994.[20]

What rights do data subjects have?

Data subjects have the Rights to:

- Information relating to the processing of their Personal Data
- access to their Personal Data
- prevent processing likely to cause damage or distress
- prevent processing for the purposes of Direct Marketing
- prevent decision making which relates to them by solely automatic means
- compensation for damage or distress arising from failure to comply with the Act
- Rectification, Blocking, erasure or Destruction of Personal Data where the same is inaccurate or contains an opinion which appears to be based upon inaccurate data

Main conclusions

- When contracting online set up your e-business web-site so that it does not constitute an offer, but an invitation to treat.

19 Dr. Barber, Barry FBCS et al The British Computer Society's Data Protection Committee, Data Protection - everybody's business, a practical guide for professionals and business managers, Optichrome The Printing Group, 1998 p.45-6.
20 Dr. Barber, Barry FBCS et al p.44.



- If you have the market power get would be traders using your b2b e-business web-site to sign up to your standard terms and conditions in return for allowing them to use the site. Within those terms and conditions specify that English law shall govern the contract. Also force the user of the site to scroll through those terms and conditions and click on a button to confirm acceptance of them to ensure they are incorporated into the contract.

- Cross jurisdictional issues are a fact of online life, be prepared for the risks. It may not be possible to foresee every possible risk. However, legal advice could go some considerable way towards clarifying the likely scenarios which may be encountered. These jurisdiction issues are governed by the Lugano and Brussels conventions.

- Signatures, writing (except for special contracts such as the sale of land), digital and or electronic signatures are not necessary to make a contract binding in English law.

- Encryption is a useful tool and Asymmetric encryption systems overcome many of the problems of Symmetric encryption. Asymmetric encryption systems are also employed in creating digital signatures.

- Digital signatures offer similar evidential and authentication benefits to those provided by hand-written signatures.

- The RIPA has big teeth, if your organisation uses or will use encryption then ensure that it will be in a position to comply with any s.49 RIPA Notice which may be received. There are 3 possible outcomes to a s.49 notice: (a) provision of the key to the authorities, (b) decryption of the message(s) in question for the authorities by the key holder, and or (c) prosecution of the key holder.

- The Data Protection Commissioner must be notified of your business use of Personal Data. Such data processing as carried out by your organisation should comply with the full terms of the 1998 Act and its eight data protection principles. There are numerous offences under the 1998 Act for which organisations and their company directors, data controllers and other officers can be prosecuted.

- The me-commerce example shows how, in a favourable regulatory climate the UK's me-commerce technology has flourished and now exceeds that available in the USA. This gives great cause for optimism for the UK's online future. However, it would be folly to underestimate the great upheavals ahead, as e-business and me-business change the way that the UK conducts business.

- The fundamental conclusion is that whilst e-business offers considerable scope for reducing costs and adding value it also poses new challenges. Many of these challenges are a mixture of technological and legal practicalities. Neither should be viewed in isolation and both should be seen in the context of the business which the solutions are created to serve. Serving that business should remain the key objective which should not be lost sight of.

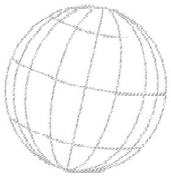
Further Information

Sources of further and original information are contained in the footnotes to this chapter. Additional sources of further assistance and information are contained in the final section of this publication.

Mark Taylor's and other mission delegates' contact details and those of the businesses visited in the USA are also listed toward the end of this publication.

Acknowledgements

Mark Taylor wishes to thank Andrew Digwood, trainee solicitor with Hammond Suddards Edge for his assistance.



10. B2b e-business procurement: e-marketplaces and competition law

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Introduction

Over the past two years, new business to business ("b2b") e-marketplaces have been announced almost daily. They now cover almost every significant major industry. These b2b e-marketplaces are extremely diverse in terms of their membership, the services that they provide, their ownership structures and their organisation. Just as business-to-business commerce already assumes many forms in the offline world, the same is also true in the online world.

The first-generation e-marketplaces were primarily exchanges established by independent operators, which excluded equity participation by buyers and sellers in order to preserve neutrality. Such internet exchanges first appeared in industries with homogenous products such as chemicals, energy, telecommunications and electronic components. This type of independent internet exchange raises few, if any, competition law concerns.

More recently, however, buyers and sellers within a particular industry have announced plans to group together to create their own industry-wide marketplaces. Clearly, such competitor collaboration has far greater potential to raise competition law concerns. Examples of such industry-led marketplaces include:

- **Covisint:** a joint venture between General Motors, Ford, Daimler Chrysler, Renault and Nissan which is an e-marketplace for the supply of auto-components;
- **e2open.com:** an exchange including IBM, Hitachi, Matsushita, LG Electronics, Nortel Networks, Seagate Technology, Solectron and Toshiba to buy and sell computer, electronic and telecommunications products; and
- **Transora:** an e-marketplace in the food, beverage and consumer products sector, created by 50 companies including Coca-Cola, General Mills, Kraft Foods, Proctor & Gamble and Unilever.

UK and EU position

For companies operating in the UK the relevant competition provisions can be found in the Competition Act 1998 (the "CA") which came into effect in March 2000. It applies to agreements and practices the effects of which are felt mainly in the UK. The CA incorporates the Article 81 and 82 EC Treaty prohibitions into domestic UK law referred to respectively as the Chapter I and Chapter II prohibitions. The CA requires UK authorities to ensure that there is no inconsistency with the principles of European competition rules.

Chapter I

Chapter I of the CA prohibits all agreements between undertakings that have as their object or effect the prevention, restriction or distortion of competition, which may affect trade within the UK or a part thereof. This covers, in particular, concerted practices involving price-fixing and market sharing.

Chapter II

Chapter II prohibits any abuse of a dominant position by one or more undertakings on the relevant market.

Dominance

Dominance will always depend on the definition of the relevant geographic and product markets. Where a company has a market share of 40% or more there is a risk of dominance being found to exist. Unsurprisingly organisations which find themselves under regulatory scrutiny seek to define their markets widely. By doing so they may be able to show that whilst they supply 50% of all of sales of product X in the UK, that consumers actually can use either products X, Y or Z to the same effect. Consequently they may be able to



establish the relevant market as being that for products X, Y and Z, thereby taking the organisation's share of the relevant market below the 40% threshold - and the organisation out of the danger zone.

Again unsurprisingly the victims of an alleged abuse of a dominant position such as a smaller competitor may well argue that the relevant market is narrower and indeed confined to product X.

Abuse

Imposition of unfair purchase or selling prices, limiting or refusing to supply or attaching additional conditions to contracts that such organisations would otherwise not be able to apply may all constitute an abuse of a dominant position.

Precautions

Any organisation of significant scale would be well advised to consult economists and lawyers before taking any action which could constitute an abuse of a dominant position! Likewise advice should be sought before entering any exclusive or otherwise prohibited agreements.

Jurisdiction

Where there is an appreciable effect on trade between Member States of the EU Articles 81 and 82 of the EC Treaty will be the applicable provisions. Where, for example, companies enter agreements which prevent, restrict or distort competition they risk being caught by the Article 81 prohibition. Such companies will then have to obtain an exemption for their agreement from the European Commission. Many agreements which could fall into this category are covered by block exemptions. For example, with respect to agreements relating to intellectual property. Any organisation with agreements which may be caught should seek specialist legal advice as this is a complicated area which is beyond the scope of this report. The European Commission has broad enforcement powers in terms of both Article 81 and 82 prohibitions, with the power to impose fines of up to 10% of company turnover worldwide. In addition agreements which infringe the Article 81 prohibition are void and unenforceable as between the parties, and expose the parties to a risk of third party actions for damages in respect of any loss incurred as a result of the infringement.

Agreements

Agreements between undertakings fall for consideration under Article 81 of the EC Treaty and the Chapter I prohibition in the Competition Act. In EU competition law terms, such agreements are generally distinguished as either being vertical or horizontal. Vertical agreements are agreements (or concerted practices) between companies at different stages in the supply chain, the best example being distribution agreements between supplier and retailer. Horizontal agreements, are those agreements (or concerted practices) between companies operating at the same level in the market, i.e. who are effectively competitors.

The European Commission's rules and accompanying guidelines on vertical agreements do not deal specifically with e-commerce. As a general rule, however, a supplier cannot restrict its distributors from using the Internet to advertise and sell its products. However there are two important exceptions. Firstly, a restriction may be imposed on the use of the Internet where the promotion of e-sales would lead to active selling into another distributor's territory or customer group. So, for example, the Belgian distributor of a UK-based company's products can be prevented from "actively" selling into France. However, the supplier can not prevent the Belgian distributor from selling to a French customer who solicits the goods via the distributor's web-site. Such sales are described as "passive" sales. Secondly, if objectively justified, a supplier may always place conditions on the sale of its product through a distributor's web-site, just as he may impose quality standards for a shop or for advertising and promotion in general.

In contrast to vertical agreements along the supply chain, b2b marketplaces are usually horizontal in nature. In other words, they usually involve forms of co-operation between competitors operating at the same level in their respective supply chains.

The perceived danger of b2b exchanges

The pace of development of this kind of on-line b2b exchange has taken the regulatory authorities by surprise. The main competition concern is that such exchanges may operate as disguised cartels in which competitors can co-ordinate their market behaviour, by dividing markets, and sharing information on price and



other sensitive matters. Many such exchanges are joint ventures that would normally be illegal under the competition rules. The European Commission has recently created a team of officials specifically to deal with the mounting number of notifications of b2b exchanges.

Where such a joint venture (the "JV") is to operate as a separate and autonomous legal entity from its parents, notification of the JV agreement may be required under the Merger Control Regulation if the JV has a "Community Dimension" (i.e. the turnover thresholds contained in the Regulation are met). Where the JV is not to operate as a separate and autonomous legal entity the agreement may still have to be notified to the European Commission under Article 81 of the EC Treaty if there is a potential effect on trade between Member States. Where the effects are likely to be purely domestic similar procedures are applied by the UK competition authorities.

Routes to exemption

To benefit from exemption from the Article 81 prohibition the JV parent companies must show that the exchange will be pro-competitive and that any restrictions on competition inherent within it are necessary to make the arrangement work. Moreover, it must also be shown that the efficiencies gained by use of the new marketplace will be passed on to consumers.

In a recent European Commission decision on the creation of Volbroker.com (a JV e-marketplace set up by six major banks to provide brokerage services for automated trading in foreign currency exchange options) the Commission also required that: (i) the marketplace be open to other competitors and (ii) requested guarantees that sensitive market information would not be passed between members. It is likely that these kinds of conditions will be applied more forcefully where the marketplace will result in a significant degree of market concentration.

US and EU anti-trust / competition policy on e-marketplaces

At present, both the USA's Federal Trade Commission (the "FTC") and the EU's European Commission (the "Commission") are very much still in a learning phase as regards the potential competition law implications of business to business electronic marketplaces. Neither institution has issued formal guidance dealing specifically with these issues. However, the FTC, in particular has stated that it would be premature to do so, given that b2b e-marketplaces are a phenomenon which is still developing. Having said that both, the FTC and the Commission have made statements concerning competition policy and b2b e-marketplaces. A summary of their current thinking and those statements are set out below.

Anti-trust Analysis of b2b e-marketplaces

The FTC has recently stated that the anti-trust issues that will be relevant will vary depending on a number of factors including: (i) how specific marketplaces are organised, (ii) the extent and types of information exchanged, (iii) whether the marketplace involves joint selling or joint purchasing, and (iv) whether there are multiple b2b e-marketplaces in the relevant market.

In carrying out its anti-trust analysis of an e-marketplace the FTC will use the general rules contained in its "Antitrust Guidelines for Collaborations among Competitors"[1] which were issued by the FTC and the US Department of Justice in April 2000.

"Per se" Illegality and the "Rule of Reason"

The guidelines provide for two types of analysis of agreements between competitors under US anti-trust rules. Certain types of agreement are "per se" illegal if they are likely to harm competition and to have no significant pro-competitive benefit. Examples include agreements among competitors to fix prices or output, rig bids, or share or divide markets by allocating customers, suppliers or territories. Agreements which are not "per se" illegal are evaluated under the so-called "rule of reason", which requires analysis of the overall competitive effect of an agreement. Such analysis requires consideration of both (i) possible anti-competitive harm and (ii) the potential pro-competitive benefits of an agreement. If an investigation indicates anti-competitive harm, the enforcement agencies

1 United States Department of Justice and Federal Trade Commission, Guidelines for Collaborations Among Competitors (7 April 2000) reprinted in 4 Trade Reg. Rep (CCH) 3,160.

examine whether the relevant agreement is reasonably necessary to achieve pro-competitive benefits that are likely to off-set such harm.

Application of the Rule of Reason to b2b E-Marketplaces

Agreements between competitors establishing b2b e-marketplaces are most likely to be assessed under the "rule of reason". It is, therefore, necessary to consider both any anti-competitive harm which may arise from such b2b agreements as well as the potential pro-competitive benefits.

Potential Anti-Competitive Harm

The following types of joint conduct have been identified as having the potential to raise anti-trust issues:

Joint Marketing and Purchasing

One of the first questions is whether a particular b2b e-marketplace involves joint selling or joint purchasing. If it does, the general principles contained in the Guidelines (referred to above) will apply. It is recognised that joint purchasing and joint selling arrangements may in certain circumstances, be pro-competitive but that they may result in anti-competitive harm where they create, increase or facilitate the exercise of market power.

Information Exchange

The FTC has stated that b2b e-marketplaces have the potential to raise issues regarding information sharing. Previous FTC experience has shown that information-sharing using modern information technology can facilitate complex collusion practices among competitors. Of particular concern is the sharing of information relating to price, output, costs or strategic planning.

Much depends on how b2b e-marketplaces are structured. For example, the use of "firewalls" or other devices to limit the exchange of competitively significant information may solve any potential problems in this area.

Membership

With regard to membership, the FTC has two distinct concerns: (i) **exclusion:** which involves restrictions permitting only select businesses to participate in a given b2b marketplace; and (ii) **exclusivity:** which involves rules prohibiting firms that do participate in a given marketplace from joining other b2b e-marketplaces or sending them too much business, including exclusive purchasing and minimum purchasing requirements.

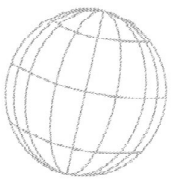
The FTC's analysis will focus upon whether denial of membership significantly raises rivals' costs by either denying completely or limiting access to a key market input point and, if so, whether this is likely to harm competition downstream. Only exclusionary conduct that harms competition rather than harming the excluded competitor alone would be challenged. Relevant factors to be taken into account include, for example, whether or not the excluded firm could readily form or join an alternative e-marketplace, or whether conversely participation in an e-marketplace as a customer is in fact necessary for acquiring comparably-priced inputs.

Network Effects

With regard to network effects, the focus shifts from the markets for the goods bought and sold through b2b e-marketplaces, to the market for marketplaces themselves. If one or a few e-marketplaces were to grow so large as to crowd out all others, it may attract the FTC's attention, although the FTC recognises that there may be legitimate reasons for such consolidation, and that certain markets may not efficiently support more than one b2b e-marketplace.

Potential Pro-Competitive Benefits

With regard to the potential pro-competitive benefits of e-marketplaces, the FTC recognises the significant potential of b2b e-marketplaces to create efficiencies, particularly in terms of reduced transaction costs, and their ability to create substantial productivity-increasing effects, which may ultimately lead to lower prices and greater innovation for consumers.



The FTC in action: CovisInt

Covisint is a b2b e-marketplace for automotive manufacturers to source their components. It has been created by General Motors Corporation, Ford Motor Corporation, Daimler Chrysler AG, Renault SA, and Nisan Motor Co. Ltd plus two IT solutions providers: CommerceOne Inc and Oracle Corporation.

At the time of the Engineering Council Industry Affiliate's e-business mission to the USA - Covisint were unable to comment in any detail about the FTC scrutiny which they were under. Indeed some members of the Covisint team at Ford had been subjected to a dawn raid by the authorities in search of evidence. Clearly the US authorities take their role very seriously indeed.

After the Mission returned to the UK Covisint was informed that the FTC had closed its investigation on 11 September 2000. In its notification the FTC indicated its reasoning in the following terms:

"...because Covisint is in the early stages of its development and has not yet adopted bylaws, operating rules, or terms for participant access, because it is not yet operational, and because its founders represent such a large share of the automobile market, the FTC cannot say that implementation of the Covisint venture will not cause competitive concerns. In view of this, the FTC reserved the right to take such further action as the public interest may require".

FTC Chairman Robert Pitofsky has also stated:

"As we learned at the FTC's workshop in June, b2b electronic marketplaces offer great promise as means through which significant cost savings can be achieved, business processes can be more efficiently organised, and competition may be enhanced. B2bs have a great potential to benefit both businesses and consumers through increased productivity and lower prices. Of course, as is the case with any joint venture, whether in the traditional or new economy, b2bs should be organised and implemented in ways that maintain competition. The antitrust analysis of an individual b2b will be specific to its mission, its structure, its particular market circumstances, procedures and rules for organisation and operation, and actual operations and market performance".[2]

So what does all this mean in practice? The answer seems to be that Covisint can go ahead for now whilst the FTC operates a suck-it-and-see approach. What it also means is that Covisint is by no means in the clear.

If the FTC subsequently takes the view that Covisint is having a detrimental effect upon the public interest (i.e. competition) then it could still be broken up or ordered to change its behaviour in the marketplace as has recently happened to the mighty Microsoft.

Covisint could face further dawn raids and court action in the medium and longer term. Whether or not it does will depend to a large extent upon how it behaves in the marketplace and the quality and uptake of its legal advice.

The FTC's decision keeps its options open and is wise in giving Covisint the chance to deliver real benefits to consumers or fail to do so as the case may be. This will continue to be an interesting venture to watch for lawyers and industrialists for some time to come.

EC competition policy

Like the FTC, the Commission is only just beginning to grapple with the potential competition law challenges posed by the rapid emergence of industry-led b2b e-marketplaces. The Commission has created a new specialist team of officials specifically to co-ordinate its response to the growing number of b2b e-marketplaces being set up by industrial companies. The team will act as an "entry point" to the Commission for b2b e-marketplaces and is designed to ensure that a consistent approach is taken between different parts of the competition directorate. The Commission's policy in relation to b2b e-marketplaces is expected to be positive. A spokeswoman was recently quoted as saying:

"In the sense that they appear pro-competitive, increase transparency and give significant cost-efficiencies, they could have the effect of bringing prices down and be good for the economy in general".

However, she also indicated that officials would look closely at the fine print of agreements to ensure that companies were not using them to run disguised cartels.

2 US Federal Trade Commission: http://www.ftc.gov/opa/2000/09/covisint.htm



Applicable law

B2b e-marketplaces may be notified to the Commission under either the European Merger Control Regulation ("EMCR"), or Regulation 17, which implements Article 81 of the EC Treaty, depending on how they are structured. The EMCR applies to so-called "full-function" joint ventures. A full-function joint venture involves the creation of a new company with all the assets necessary to play a durable, distinct and identifiable role on the market. Such a joint venture will be appraised under the substantive test contained in the EMCR (i.e. whether or not it creates or strengthens a dominant position as a result of which effective competition would be significantly impeded in the common market or a substantial part thereof).

Furthermore any co-ordination aspects of the joint venture will be assessed in accordance with Article 81 of the EC Treaty, which prohibits agreements which have as their object or effect the prevention, restriction or distortion of competition and which may affect trade between Member States. Industry-led b2b e-marketplaces are very likely to raise just such additional issues of co-ordination between the participants. Such additional co-ordination issues will be appraised under Article 81 of the EC Treaty, even if notified to the Merger Task Force in the context of the EMCR. In practical terms: industry led b2b e-marketplaces may have to negotiate their way through both sets of rules under the EMCR and Article 81.

Recent Decisions

The European Commission has already approved some e-business joint ventures. For example, "e-maro" an electronic trading platform for the supply of office equipment was notified to it under the EMCR by Deutsche Bank and SAP, a software company. This transaction did not raise any competition concerns because the activities of the two parent companies do not overlap in any of the relevant markets.[3] Another example is "Volbroker.com", an electronic brokerage joint venture between six major banks, which was notified to the Commission under Regulation 17. The joint venture was approved only after the participants had provided various assurances to the Commission that adequate safeguards would be put in place to avoid the exchange of commercially sensitive information.4

Competition Analysis Under Article 81

Like the FTC, the Commission will apply established principles of competition law to the emerging b2b e-marketplaces. The principles for the assessment of horizontal co-operation are contained in draft Guidelines published by the Commission in April 2000 and due to be adopted by the end of the year.[5] The Guidelines recognise that co-operation between competitors may produce certain benefits such as cost savings, greater efficiency and faster innovation. It may also raise competition problems, particularly if it enables parties to maintain, gain or increase market power.

The first step in any competition law analysis will therefore be to establish the position of the parties in the markets affected by the co-operation. If the combined market share and position of the parties are strong then Article 81 is likely to apply to any potential anti-competitive effects of the e-marketplace, such as those described above.

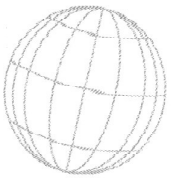
If an infringement of Article 81 is identified, then an analysis of the economic benefits of the co-operation will be required for the purposes of applying Article 81(3). In carrying out such analysis the Commission will apply existing principles of competition law, including notably, those contained in its draft Guidelines on horizontal co-operation.

Conclusions

To summarise, a number of preliminary conclusions may be drawn regarding the application of competition policy to e-marketplaces. These are as follows:

- Both the FTC and the Commission are still very much in the "learning phase" with regard to e-marketplaces.
- B2b e-marketplaces offer many pro-competitive benefits, but also possibly raise serious competition law concerns.

3 Press Release IP/00/783; 14 July 2000.



- The issues raised by e-marketplaces are not necessarily novel (e.g. collusion, market power and exclusionary conduct) but the factual context is new. General principles of competition law may be applied. The FTC will apply the "rule of reason" to agreements establishing e-marketplaces, in accordance with the principles laid down in its Guidelines on competitor collaboration. The Commission will apply Article 81 to the co ordination aspects arising from the e-marketplace. The principles for assessment by the Commission are those contained in its draft Guidelines on horizontal co-operation.

- As with all new technologies, competition authorities will be concerned not to stifle innovation through over-regulation, and will intervene only when there is a genuine threat to competition in the relevant market. The FTC's positive approach in Covisint and the Commission's positive approach in for example Volbroker suggest that both authorities will for the time being allow such b2b e-marketplaces to exist. However, they will no doubt be equally keen to protect the public interest and competition. Hence it may take a decade and a few large disputes before the relevant law and its application in this new field become settled.

- Businesses contemplating participation in a b2b e-marketplace are advised to seek specialist legal advice on competition law.

Further Information

Sources of further and original information are contained in the footnotes to this chapter. Additional sources of further assistance and information are contained in the final section of this publication.

Mark Taylor's and other mission delegates' contact details and those of the businesses visited in the USA are also listed toward the end of this publication.

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Mark Taylor also wishes to thank Fay Stroud, who is a solicitor specialising in competition law in the Brussels offices of Hammond Suddards Edge, for her assistance.

4 Press Release IP/00/896; 31 July 2000.
5 Draft guidelines on the applicability of Articles 81 to horizontal co-operation OJ C118/14 27.04.2000



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Web: www.tradepartners.gov.uk



Where to get further information and advice

E-commerce Advice Online

A new resource is available on the web specifically to give businesses practical advice on how to get started in e-commerce or e-business. The address is www.businessadviceonline.org/ecommerceebusiness. The site is designed to help smaller businesses get their hands on useful, usable information and realistic ideas that can be put into action.

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www.altavista.com
www.infoseek.go.com
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www.lycos.com
www.northernlight.com
www.webcrawler.com
www.yahoo.com
www.hotbot.lycos.com

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www.ukdirectory.co.uk
www.ukindex.co.uk
www.searchuk.co.uk
www.yahoo.co.uk
www.yell.co.uk

There are thousands of ISPs to choose from. Try:

www.ISPcheck.com;
thelist.internet.com; and
www.isps.com

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Competition regulation

e-mail competitionact.enquiries@oft.gov.uk

Office of Fair Trading
Feild House
15-25 Bream's Buildings
London EC4A 1PR
Tel 020 72118989

Competition Act guides
Tel 0870 60 60 321

Data Protection

e-mail mail@dataprotection.gov.uk

Data Protection Commissioner
Wycliffe House
Water Lane
Wilmslow
Cheshire SK9 5AF
Tel 01625 545 700
Fax 01625 524 510

Technology advice

UK online for business advisers

A network of UK online for business advisers are available throughout the United Kingdom, in partnership with Business Links in England and the equivalent in Scotland, Northern Ireland and Wales.

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How mobile communications can work for you
How networking can work for you
How EDI can work for you
How data storage can work for you
E-commerce; how trading online can work for you

Doing business electronically CD-ROM

This CD-ROM will start you thinking about how technology could support your business – whether you are just starting to use technology or have been using it for some time.

With case studies, explanations of the technology and online help, it's a comprehensive UK online for business resource that will help turn your thoughts into actions.

Sharing multimedia success

Read about award winning, small to medium sized companies who've become more profitable and competitive by utilising technology. They'll demonstrate how multimedia solutions can give real commercial benefits.

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Scotland

Call the Scottish Business Shop Network on freephone 0800 787 878
Visit the web site at www.business-shops.co.uk

Wales

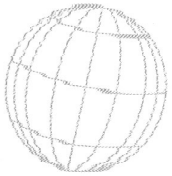
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