

Telecoms Infotech Forum

Briefing paper

# E-Business and E-Marketplaces

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## E-Business and E-Marketplaces

Despite the hype about the revenues generated by global e-commerce,<sup>1</sup> e-commerce is here to stay, to grow and to transform the way business is conducted. This simple fact is obviously important to a range of businesses. It is important for equipment, software and systems suppliers. It is important for telecom companies trying to reinvent themselves in face of declining revenues from traditional sources. It is important for trading companies and intermediaries who may spot a new opportunity, or who may see their business disappear. It is important for consultants, systems integrators and market forecasters and firms supplying a host of ancillary support services. And, not least, it is important for the companies adopting e-business models.

### Various Estimates and Forecasts of the Size of the Global B2B Market

Year	B2B in US\$	Source
1998	US\$43 billion	Forrester Research
1999	US\$145 billion	Gartner Group
2000	US\$403 billion or US\$843 billion	Gartner Group or Forrester Research
2001	US\$953 billion	Gartner Group
2002	US\$2.2 trillion	Boston Consulting Group
2003	US\$1.4 trillion or US\$2 trillion	Forrester Research or Boston Consulting Group
2004	US\$7 trillion <sup>1</sup>	Gartner Group

Note: (1) 7 per cent of US\$105 trillion forecast global transactions. For a summary of these and other forecasts, also see *B2B Transaction Hubs*, Gilbert Tobin, 27 March 2000, **Error! Bookmark not defined.**

### E-Business: Choose Your Own Definition?

Is e-business a model? Or is it a procedure, a way of doing the usual things in a different way? Or is it a new way of making money? Depending upon definitions it can be any and all of these things, but it isn't any and all of these things to every company adopting e-business, or participating in an e-marketplace. For each company e-business will imply something different. So what does it imply?

For the purposes of this paper, we will use the terminology to mean the following. An e-business model implies a way of doing business with others. For example, supply chain management (SCM) and customer relations management (CRM) both involve commercial intercourse with the outside

<sup>1</sup> A study of the European market by the Gartner Group, commissioned by Cisco, forecast e-commerce as measured by the value of goods and services sold over the Internet to grow to US\$1 trillion by 2004. But around half the current value of the Internet economy was accounted for by infrastructure costs. (*CommunicationsWeek*, 13 November 2000). According to Jupiter Communications, B2B marketplace infrastructure spending in the US will grow from US\$2.1 billion in 2000 to US\$80.9 billion by 2005.

world, and if they are handled ‘online’ then they do become part of an e-business model. That is why, in an Internet world, it is called business-*to*-business, or B2B and B2C and B2G. E-business is distinguished as such from management information systems (MIS) and the use of applications such as Enterprise Resource Planning (ERP). They may become an important component of an e-business model - for example, when part of a company’s database becomes open to suppliers who can forecast requirements based upon the company’s order book or its inventory - but they do not require an e-business model to function. They are procedures, ways of doing things that are more efficient, such as just-in-time management and improving stock control and scheduling. They may be more productive as well, that is to say, they enable companies to extend or improve the range of goods and services they offer. So here e-business is confined to the idea that computer-based (see below) electronic communications is used between businesses.

## E-Marketplaces

E-marketplaces are a logical extension of the ability of large e-business companies to place the procurement process online, and of all e-commerce companies to place their goods and services online, including payment and logistics.<sup>2</sup> Sometimes e-marketplaces are established by intermediaries who spot the opportunity; other times they represent a collaboration between large incumbent manufacturers or service companies, like airlines and transportation companies, to reduce the cost of materials purchased and shorten delivery times. They can be vertically focused on particular industries, or they can be horizontally focused to provide goods and support services across a wide variety of industries. They can be procurement focused, wholesale or retail focused, they can be inclusive of a wide-range of interests including governments, industry and professionals, or exclusive. Perhaps a key distinction in their very early development is whether they are set up and run by intermediaries and e-commerce enablers, or they are dominated and run by the large industrial corporations. For SMEs, when they are locked into a sub-contracting value chain, the likelihood is their participation will come through their buyer, but for SMEs operating independently the intermediary-established e-marketplace may be an attractive and cost-effective way to extend market reach. Such e-marketplaces are likely to be ‘aggregators’ running online catalogue services, like the highly successful Asian Sources, which has since graduated to become Global Sources.

E-marketplaces are in their infancy, yet represent an enormous potential in at least three ways. First, undoubtedly the main driver of most *large* e-marketplaces – and scale counts – is the reduction of procurement costs. So much so that there are real fears that some e-marketplaces will simply enhance the monopsony - that is, monopoly buying - power of larger buyers at the expense of SMEs.<sup>3</sup> Second, there are backward linkages to e-business applications and more efficient business practices. Companies forced to join e-marketplaces either because their buyers insist upon

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<sup>2</sup> By definition, marketplaces of all kinds rely upon liquidity. The classic e-marketplace is therefore an online stock exchange in which liquidity is everything. For this reason also, e-marketplaces that have the guaranteed purchasing power of large industrial corporations or utilities behind them will flourish while others struggle.

<sup>3</sup> MetalSite, a North American e-marketplace for steel, has a corporate lawyer present at all their board meetings to ensure they don’t collude under commercial and criminal law.

it, or because they see opportunities that will otherwise by-pass them, inevitably have to re-engineer themselves with e-business processes if they are to survive in the new environment, and certainly if they are to gain from it. This is an economic gain for the society insofar as the efficiency is captured locally. Third, the issue of reach. E-marketplaces imply regional, not to say global, trade and development opportunities. Again this benefits both the companies concerned and the society in which they are located or from which they source their supplies.<sup>4</sup>

At this early stage, the revenue models<sup>5, 6</sup> – which the somewhat broader term ‘business model’ implies – adopted by e-marketplaces are mostly based upon fees and commissions (usually within the 1-5 per cent range) normally levied on sellers, but sometimes on buyers and sometimes on both, and some advertising revenue. Other income comes from flat rate communications charges for minimum rates of usage, incremental charges for additional support services, subscriptions, third party licensing fees, and sponsorship. Gain sharing from the transactions costs saved is as yet untried, and would perhaps be impossible to verify. Like many dot.coms, customer acquisition costs can be high, but in the form of very low commissions, so without high liquidity/high turnover many e-marketplaces are bound to fail. If the success of e-marketplaces rests ultimately upon how geared up for e-business the buyers and sellers are, then the first wave of e-marketplaces will be, in many cases, premature.

### From Here to Eternity?

In all cases of e-commerce, e-business and e-marketplaces, we are talking about an enabling means of *computer-based* communication between the participants, which brings them within a ‘community of interest’. Without this qualifier, we can trace e-business right back to the early use of the telegraph, the telephone and later the fax machine, but with it we can limit our quest to the beginnings of computer-to-computer file transfers which started in the 1960s but took on commercial significance in the 1970s. In manufacturing, computer-aided design (CAD) allowed companies to transfer technical drawings over communications networks. In commerce pioneering versions of Electronic Document Interchange (EDI) spread, but only as expensive proprietary systems over value added networks (VANS). The use and exchange of spreadsheets was a versatile application that became very popular.

In the 1990s the rise of the Internet, driven by the enormous popularity of email has swept all before it. Internet Protocol, and its extensions, with the added facility of the World Wide Web and

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<sup>4</sup> In all these cases the question arises of who captures what share of the benefits. This is true for a company situated within a value chain, and for a society. This is the reason why Governments and communities have a direct interest in the outcome.

<sup>5</sup> See *Entering the 21<sup>st</sup> Century: Competition Policy in the World of B2B Electronic Marketplaces*, Report by the Federal Trade Commission Staff, October 2000, Washington D.C.

<sup>6</sup> According to some estimates, less than 10 per cent of all operational electronic marketplaces are transaction enabled.

browser technology, has simply revolutionized the means of electronic communications. Documents in html, and now in eXtensible markup language (XML), are setting standards, crucial in a world of communications. The effects are profound, not least for the companies that invested hundreds of thousands of dollars, if not millions, in the 1990s on ERP software and legacy systems that are now compromised. Larry Ellison, founder and head of the mighty Oracle Corporation made the point:

“We blew it... We’ve learned from the Internet that you don’t put shared applications on the client and that you centralize complexity.”

But that’s not bad business for the suppliers of equipment, systems and software and for systems integrators. As the same issue of *The Economist*, 26 June 1999, pointed out:

“IBM estimates that 70 per cent of all code written today consists of interfaces, protocols and other procedures to establish linkages among various systems.”

The costs of systems upgrade and systems integration can be very high. One estimate of the cost of a PC in the USA in 1999 was US\$1-2,000, but the annual recurrent costs were US\$8-12,000. Firewalls, redundancy and other security issues present their own headaches. Most problematic of all is the supply and retention of IT skilled and literate people who can handle both emergencies and the day-to-day efficient operation of these systems. Even if a company has all this in place, there is no guarantee their trading partners or customers are equally capable. This will be a constraint on the growth of e-business and e-marketplaces across Asia. It’s really a question of critical mass.

E-business is now in another period of transition, but one that is upset by the lack of effective market standards. Standards are quintessential to communications, they are what communications are about at the most functional level, although it is evident that North American standards different from European and again from Japanese. This reflects the politics of national standards. But in the world of IT and computing, standards have been left largely to the market – despite massive state involvement through defence and science and technology budgets. The economic cost to the business community of a lack of standards for IT has been high, and maybe this is the price that has to be paid for rapid innovation. But the consequences could become increasingly costly as electronic commerce becomes more and more central to the welfare of nations, and more and more an essential part of trade and development. There are standards initiatives being taken to tackle this problem, see **Error! Bookmark not defined.**, for example.

### E-Business in Asia

Estimates are difficult to come by. The Gartner Group has forecast B2B in the Asia-Pacific may reach US\$270 billion by 2003 - 20 per cent of their world total estimate of US\$1.4 trillion – and US\$910 billion in 2004. The jump is seen as being driven by liquidity as more Asian banks decide to participate. Chemicals, rubber and plastics are forecast as contributing US\$100 billion, with textiles, apparel, shoes and leather adding a further US\$18 billion. But right now everyone is agreed

that electronic business remains very limited in Asia,<sup>7</sup> and any data across the Asia Pacific will be dominated by Japan where large corporations have developed their own quite extensive networks, as the following table suggests.

### B2B Forecasts for Selected Asian Markets - 2003

Economy	B2B Forecast for 2003 (US\$ million)
Australia	\$89,800
China, mainland	\$12,940
Hong Kong, SAR	\$2,690
India	\$3,710
Indonesia	\$470
Korea	\$93,400
Malaysia	\$2,800
Philippines	\$620
Singapore	\$19,900
Taiwan	\$4,450
Thailand	\$4,300
<i>Total without Japan</i>	<i>\$235,080</i>
Japan	\$591,300
<i>Total with Japan</i>	<i>\$826,380</i>
United States	\$1,438,000

Sources: IDC, Forrester, Merrill Lynch, MITI Japan, Morgan Stanley Dean Witter. Forrester Research estimates global online cross-border marketplace trade will reach US\$408 billion by 2004, of which US\$219 billion will be in the Asia-Pacific.

Comparing Asia to North America and Europe, the difficulties for e-business and e-marketplace development are fairly obvious. North America has a vast and unified market, with a common language, common commercial laws and highly developed IT and telecommunications sectors. Europe is unifying its markets, unifying its laws and its currency, if not its language – although English is the language of international business – and in Western Europe businesses are moving fast along the e-business learning curve, supported by rapidly improving infrastructure. In both North America and Europe there are many multinational companies, many large national companies, many large utility companies and many central and local government agencies, all capable of providing critical

<sup>7</sup> The National Computer Board in Singapore in January 1999 found 9 per cent of companies surveyed engaged in Internet trading. Of procurement, 95 per cent reported actual trading volumes of less than S\$100,000 per month, but 1.6 per cent in excess of S\$10 million over the Internet. See **Error! Bookmark not defined.**

mass purchasing power. Outside of Japan, and to a lesser extent Australia/New Zealand, there are no Asian economies where all these factors are present.

In Hong Kong, Singapore, South Korea and Taiwan SMEs are the overwhelming employers of labour, and SMEs dominate manufacturing throughout the region, which is home to over 50 per cent of the world's manufacturing activity, overwhelmingly direct goods. Large numbers of Asia's manufacturers are part of a long and fragmented sub-contracting supply chain passing through different language and legal zones, each with their own ways of doing business. Most are not geared up to e-business, and probably have little motivation. Even if they were engaged in an e-marketplace, the costs of doing business would be high because of what economists call 'moral hazard' and 'asymmetric information'. The moral hazard issue is simply the one of knowing whether the company online is who they say they are, and can be trusted. The asymmetric information problem is that they know more about themselves than you know about them. Information markets are notoriously absent or unreliable in almost all parts of Asia, so it becomes difficult to overcome the issue of trust online. In light of this Asian e-marketplaces directed to SMEs may have to rely heavily upon enablers who can provide both the networking infrastructure and due diligence to overcome these obstacles.

#### **Asia Marketplaces May Have to Provide the Information Infrastructure?**

Asian buyers, for example, will gain less from lower procurement-process costs than US buyers have, because those costs are already low in Asia, thanks to its lower cost of labor. Conversely, Asian supply chains are much less efficient, and this leaves a wider margin for market builders to improve them, not just by establishing electronic marketplaces but also by enhancing the physical infrastructure and by offering additional services, such as help with logistics. These services are treated as extras in the United States, where marketplaces use them to gain a competitive advantage; Asian marketplaces, by contrast, will have to provide them just to get started. ('The Asian difference in B2B', Dhawan, et al. *McKinseyQuarterly*, 2000 # 4 Asia, **Error! Bookmark not defined.**)

#### **Government**

The role of government has been well rehearsed in many places, and broadly it comes down to 'promotion and facilitation'. This includes policies that encourage the development of a liberalized telecommunications and network infrastructure, legislating a 'soft' infrastructure which authorizes digital signatures, addresses data protection, intellectual property rights and a variety of security issues, and puts government itself online, both for procurement purposes and for services to citizens. But beyond these issues there remains a question of knowing exactly the dimensions of e-commerce and what its importance to the society really is.

In reality few Asian governments have any clear idea of how large their e-commerce sector is, how fast it is growing, or how it will impact on the welfare of society. In the United States government statisticians and academics use complex input-output tables to describe the commercial activity

between different sectors of the economy to estimate the size of electronic business transactions. Constructing these tables is a high-cost exercise, and the picture presented is a static one, like a camera snap shot. To get a dynamic picture or video-camera effect, the trick is to estimate the elasticity of input-output relations between sectors. For example, if General Motor's vehicle sales rise by 10 per cent, by how much does its purchase of steel rise? If GM's purchase of steel rises by, say, 7 per cent, then by how much does the demand by steel producers for electricity for firing the blast furnaces rise? And so on. If it is possible to identify what proportion of these transactions are handled electronically, it is then possible to estimate the value of that particular component of B2B. The problem is then to distinguish between additional or new business transactions, let's call them 'complementary' transactions, and transactions that used to take place offline and now take place online, in other words 'substitute' transactions. Taken together they measure total B2B, and that can be expressed as a percentage of total business activity. Taken separately, 'complementary' B2B measures new business generated through e-business, and 'substitute' transactions measure the potential gain in efficiency of doing business online as opposed to offline. **SeeError! Bookmark not defined.** as an example of a workshop discussion of methodologies.

Most governments, especially in Asia, do not have the financial or human resources to conduct such exercises, so the basis of their belief in the importance of e-business to their own economies is really just shared opinion. Case studies are a much cheaper way to illustrate the costs and benefits of e-business, but the methodological problem is that it still requires an act of faith to believe that the results of case studies can be generalized. For example, no one needs telling that e-business is of crucial importance to the financial services sector in Hong Kong, and so it is to *any* financial services sector anywhere in the world. Does that mean that it is also important to Hong Kong's clocks and watches sector? Maybe, maybe not.

So why bother? Two reasons. At the macro level it is important to understand the changing dynamics of world economic development and how it will impact on the local economy in terms of jobs, taxation revenues, and so on. At the micro level it is important because local business practices can become more efficient and productivity levels can be raised, which is the basis of all non-redistributive welfare gains. It may not be seen as the Government's job to contribute directly to this outcome - for example, policy may not favour tax breaks for investment in IT - but most people would agree that it is a legitimate role of Government to foster a climate of awareness of the issues, and provide indirect encouragement, especially in the fields of IT skills and literacy training and retraining programmes. The demonstration effect of government itself going online is also important, although it may also have the unintended effect of demonstrating the true difficulties of doing so.

## Conclusion: Asian Partnerships

A research task that needs doing is a comprehensive review of the state of e-commerce in Asia. In the absence of such material, we conclude this briefing paper with some very preliminary pointers,

presented in the table below, taken from a number of secondary sources.<sup>8</sup> The picture is patchy. It is hoped that the Forum will add more details, and certainly it would be helpful to develop a more comprehensive breakdown of e-marketplaces in Asia, their makeup and organization, their business focus and revenue models and the value of transactions. And not least, the character, pattern and volume of traffic generated, and it's routing. The nature of an e-marketplace is to substantially expand 'market reach' which implies a much more diversified and geographically spread 'community of interest'. Most IP traffic currently heads for the USA, even when it is destined to another Asian economy, but the growth of submarine cable capacity offers new opportunities to route traffic regionally, and e-marketplaces offer similar opportunities to extend trade regionally. The question then arises, who is ready for it?

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<sup>8</sup> Including *B2B Vying for Power* (Asia-Pacific Internet/e-Commerce 5, Merrill Lynch, December 2000) on the partnerships of two e-marketplace enabling companies, Ariba and Commerce One.

Economy	E-Marketplace	Partners
Australia/ New Zealand	CWO MarketSite  CorProcure Telecom New Zealand TheTradingHouse.com	Cable & Wireless Optus and Commerce One Commerce One and 14 Australia companies Ariba, partners in Australia for coal and iron ore Ariba and TNZ – marketplace for Aus/NZ
China	Bizipoint.com Others Domestic portals	China Electronics Chamber of Commerce Alibaba.com, MeetChina, ... 100ok, Letbuy, sina.com, ...
Hong Kong	Asia2B.com  PCCW/HKT Global Transport Exch. (GTX). Macrobuild.com Li & Fung	Wharf Group, (including i-Cable and New T&T), Jardine, Swire, SHK (including SUNeVision) – merged with Sesami.com Oracle Hutchison Port Holdings, Oracle – cargo. Warp Cybertech, Golden Apple Group – building/construction portal Privately controlled supply chain
Japan	Mitsubishi Corp  NTT MarketSite	Commerce One – chemicals, gas and utilities Mitsubishi, Nihon Unisys, Ricoh, Commerce One – e- procurement
Philippines	BayanTrade.com	Aboitiz Equity, Ayala, Benpres, JG Summit, PLDT, United Labs, Commerce One
Singapore	Sesami.com  Trade Alliance	SingTel, Commerce One – Asian e-hub; merged with Asia2B.com (HK) Sinar Mas, Nissho Iwai Corp., Commerce One providing vertical portals (e.g. food and paper)
South Korea	GTWebKorea  Joint Venture  Trade Alliance	Chaebols, Commerce One - portals for chemicals, autos, medical and electronics Softbank-Ariba JV to target Korea and Japan and China Sinar Mas, Nissho Iwai, Commerce One - paper and foods industries
Taiwan	Com2B.com	Commerce One's GTW, with ten partners serving nine vertical portals
Thailand	Asia Freewill  Others	Charoen Pokphand (CP), Siam Cement, United Communications Industry, Siam Commercial Bank – indirect goods Point Asia Dotcom, Samart Exchange, Shin Group, FoodMarketExchange.com
Asia-Pacific	AsiaPaperMarkets  Bolero.net eCommerce-Asia ipowerB2B.com iSteelAsia Mindtrac.com	Ariba, AsiaTech Internet, AsiaCommerce, IDA of Singapore, IFC – paper goods market in Asia, Australia/NZ, Middle East, Africa SWIFT – banking and finance Commerce One for Greater China e-market Seapower Group, Ariba – shipping services VSC Group, iMerchants Group Ariba, Chase, IFC – tire industry

	Global Sources Global Transport Network	Neptune Orient (Singapore), Hanjin (Korea), Mitsui (Japan) + six and Tradiant – shipping
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