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**Integrating old and new style commerce: E-commerce and
developing countries.**

by

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Integrating old and new style commerce: E-commerce and developing countries.

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Introduction

The G-8 countries established a Digital Opportunities Task Force, the DOT Force, in 2000 (DOT Force 2001). A core ambition of this initiative was to mobilise resources to increase the likelihood that businesses and citizens in the developing countries will benefit from the spread of digital technologies. Considerable emphasis was given to the ‘digital opportunities’ available to those who are able to apply advanced information and communication technologies effectively. Even when new services and digital applications are accessible only to a very few people, the Task Force argued, it is still feasible to encourage new forms of communication and information exchange in ways that can prove to be socially or economically beneficial to businesses and citizens in these countries.

‘Digital opportunity’ is the term coined by the G-8 governments and policy makers in other countries to refer to the potential benefits of the application of the new technologies to support the activities of firms, governments, citizens and consumers. One such opportunity that is widely acclaimed by technology and service developers, and by an increasingly vocal number of policy makers, is Internet-based e-commerce. Many believe that e-commerce development could help to reduce barriers to trade for producer firms in developing countries and strengthen their access to global markets on terms that are more favourable than would be the case in the absence of the new digital technologies.

The value of e-commerce was estimated at about USD 650 bn worldwide in 1999. Online trading is expected to increase rapidly throughout most regions of the world. E-commerce -

¹ This paper is based on research for a project entitled ‘E-Commerce for Developing Countries: Building an Evidence-base for Impact Assessment’ funded under the Globalisation and Poverty Programme of the UK Department for International Development undertaken by the author who holds the Dixons Chair in New Media and the Internet and Dr. Daniel Paré, Research Fellow at the London School of Economics and Political Science, and Professors John Humphrey and Hubert Schmitz, Institute of Development Studies, Sussex. The author is fully responsible for this paper and is grateful especially to Dr Daniel Paré for the survey of Internet web sites referenced in Table 2. This project will generate academic papers and policy briefings towards the end of 2001 and during 2002; See also IDS Policy Briefing, Issue No. 14, Sept., ‘E-Commerce: Accelerator of Development?’, Institute of Development Studies, Sussex.

especially applications that are based on the Internet – is expected to extend to businesses in all regions of the world. Business-to-business (B2B) e-commerce is forecast to grow more rapidly than business-to-consumer e-commerce and other kinds e-service applications. To take advantage of the new e-services, developing country policy makers are being urged to assess their countries' 'e-readiness' (Mansell 2001). However, there is little evidence as to whether commodity producers in developing countries stand to gain or lose from the migration of trading into the new electronic environment (KPMG 2000). Analysts are beginning to consider whether the global extension of networks will enable developing country producer firms to enter international markets and better sustain their positions in global value chains (Gereffi 2000). For producer firms that are already participants in global trade, the spread of B2B e-commerce could change their positions in global value chains in a way that strengthens or weakens them. Moodley et al. (2001) suggest that firms will need to take steps to ensure that B2B e-commerce does not disrupt existing successful trading relationships.

This paper provides a brief review of key issues and policy priorities that need to be addressed as producer firms in developing countries become more aware of, and interested in, the potential of B2B e-commerce. It is argued that in the absence of consistent evidence of the potential benefits of the new forms of trading for these firms, there is a need both for detailed, systematic and comparative analysis of the experiences of industrial sectors in developing countries and for policy initiatives that strengthen capacities for critical assessment of the best practice templates for e-commerce adoption that are often promoted by the technology and service providers and some governments in the industrialised countries.

E-commerce and the Missing Evidence Base

Policy makers often argue that the 'digital divide', i.e. the gap between those with and without affordable access to digital networks, must be reduced if firms in developing countries are to reap the potential benefits of e-commerce (OECD 2001). While it is necessary for firms that wish to develop trading relationships based on e-commerce to access reliable and affordable telecommunication infrastructures as well as Internet Service Providers, it is also necessary for many other practices and procedures that support trading relationships to be in

place. Trading in global markets often requires changes in business practices and procedures to meet the specifications of buyers located in the industrialised countries. Developments aimed at improving the efficiency of trade and at reducing transaction costs can give rise to additional, and initially hidden, costs. These may become new barriers to trade and they may generate new forms of disadvantage for producers in developing countries, despite the potential advantages of B2B e-commerce. For example, significant costs may be associated with changes in the skill base that are necessary if producer firms are to engage in B2B e-commerce. The costs of developing legislative and regulatory frameworks for e-commerce may also be considerable. In addition, the costs of establishing a set of associated business services to support e-commerce and of re-organising how trading is conducted may be substantial. All these factors need to be considered in assessing whether the movement of trade onto an electronic platform is likely to bring net benefits to producer firms.

Systematic studies of the emergence of B2B e-commerce using Internet platforms and involving traders based in the developing countries is only beginning to be undertaken drawing largely on case study material. Despite the weakness of the evidence base, many governments have become convinced that promoting e-commerce (along with other e-services) should be a core feature of their policies for poverty elimination in developing countries. For example, in its White Paper, *Eliminating World Poverty: Making Globalisation Work for the Poor*, the British government argued in December 2000 that:

'if well managed, the benefits of globalisation for poor countries and people can substantially outweigh the costs, especially in the longer term. The rapid integration of the global economy, combined with advances in technology and science, is creating unprecedented global prosperity. And this has helped to lift millions of people out of poverty. With the right policies, many millions more people can benefit in the years ahead ... *The Internet and mobile telephones offer poor countries new things to sell - from basic data entry to software - and new ways of selling old products, by cutting out the middlemen.* They can also help attract investment to poor countries and enable people to communicate with each other more freely and efficiently, both nationally and internationally.' (emphasis added)

The UK Government is not alone in its hopes for a transformation of global trade thanks to the new technologies. The United Nations High Level Panel on Information and Communication Technologies similarly concluded in 2000 that when firms in developing countries are connected to global networks, they will be able to compete on a more equitable

basis in world markets (United Nations 2000). The panel drew on the best available expertise to reach this view. But the experts, themselves, had no systematic evidence that the outcome of global networking, especially in the form of B2B e-commerce, will be a more equitable trading environment than in the past.

In fact, there is extraordinarily little empirical evidence on how the global spread of B2B e-commerce is affecting producers in developing countries. It is known that Internet access is scarcely available in the poorest countries. The ratio of Internet users to the overall population in Africa, for instance, is estimated to be about 1:750 as compared to a world average of 1:30. This ratio hides disparities within countries where Internet access is confined largely to major cities and is virtually unavailable to the approximately 60 per cent of the population that lives in rural areas. However, the growth rates for Internet access in developing countries are strong (although they build on a very small base) (see Table 1). Online Internet users increased in Africa, for example, by 136 per cent between March 1999 and March 2000 as compared to an increase in North America of 41 per cent over the same period. This suggests the beginning of market saturation in North America and highlights the growth potential (financial resources permitting) in Africa and other developing country regions.

Table 1 Changing Access Conditions

Number of People Online (in Millions)

	Mar-99	Mar-00	level increase	percentage increase
Africa	1.1	2.6	1.5	136
Asia/Pacific	27.0	68.9	41.9	155
Europe	40.1	83.4	43.3	108
Middle East	0.9	1.9	1.0	111
Canada & US	97.0	136.9	39.9	41
South America	5.3	10.7	5.4	102

Source: Nua Internet Surveys as elaborated by US Department of Commerce, Digital Economy 2000, June.

There are many anecdotes about the benefits, especially for smaller scale producers in developing countries, who are expected to be able sell into world markets once they achieve access to digital technologies (see UNDP 1995, Mansell and Wehn 1998). And, there are a

few studies of the experiences of producers within developing countries such as those in the South African automobile and apparel industries (Moodley 2000; Moodley et al. 2001).

A key finding emerging from these studies is that digital divide issues are not the most fundamental concern for producer firms in developing countries. Nor is 'e-readiness' *per se* the most salient issue. Instead, producers in developing countries want to know how, and under what conditions, the technologies and services associated with new electronic ways of trading can be integrated with their existing commercial practices in ways that are cost-effective, sustainable through time, and likely to lead to the expansion of profitable trade.

So far, it is not possible to say specifically what the advantages and disadvantages of B2B e-commerce will be for producers in developing countries because it is unclear how the introduction of electronic transactions will reshape existing value chains. It is unclear as well whether greater power will accrue to buyer firms and/or their intermediaries as a result of the new potential of B2B e-commerce (Verhoest and Hawkins 2000). Thus, even if the gaps created by the 'digital divide' in terms of affordable network access are reduced in some countries, the costs of business re-organisation and of implementing standards for product quality, time-to-delivery, and environmental protection, could outweigh the savings attributable to more efficient e-commerce transactions. In addition, efforts to encourage investment in skilled individuals and to persuade producer firms to take the financial risk of entering into B2B e-commerce relationships may prove to be more costly than initially expected.

Policy Fundamentals for Electronic Commerce

All these uncertainties about the balance between cost savings and cost increases associated with B2B e-commerce and the consequent repositioning of firms within global value chains suggests that there is an urgent need to analyse in-depth and sector by sector the experiences of firms located in developing countries. It is also important to examine the nature of the services that are bundled together in B2B e-commerce offerings to assess whether the new services are being provided in ways that are compatible with the expectations and practices of these firms. Based on an analyses of reports on the potential and risks of B2B e-commerce,

several key policy fundamentals or messages emerge. These need to be heard and acted upon by governments. This is essential if producer firms in developing countries are to be better positioned to assess how the new electronic trading environments are likely to influence their economic prospects.

First, policy makers should not create over-optimistic hopes for firms that B2B e-commerce will enable them to achieve a favourable position in world trade. Instead, policy makers should support the discovery of a variety of new commercial practices and evaluate whether these can be coupled with particular technologies and services to support long term benefits. It is important to distinguish specifically how the new forms of B2B trading differ from existing practices. For instance, how does Internet-based e-commerce differ from the practices involved in Electronic Data Interchange, an application which has been in use by some producers in developing countries for some time? If B2B e-commerce is defined broadly to designate the application of information and communication technologies to the entire business value chain, then there is an enormous range of business practices to evaluate.

It is important to recognise that far more is at stake than simply accessing the World Wide Web to gather price information, to find a buyer, or to complete a successful trade. Many products such as those produced by the horticultural or garments industries must be transported, they must meet specific quality standards, and they must be delivered according to the terms of contracts. Value chains in these and other sectors may involve countless intermediaries who operate between the producer and the ultimate buyer. The spread of the Internet does not provide magically new opportunities for producer firms based in developing countries. The opportunities and benefits are linked to specific ways in which electronic trading practices are integrated within value chains.

Secondly, it should not be assumed that investment in digital hardware, software and network infrastructures will automatically stimulate B2B e-commerce or that e-commerce applications will be of overall benefit to firms. Successful trading relationships require trust between all those involved. Existing commercial practices require the development of trust between all the organisations that are involved within global value chains. If that trust is broken, or if it is not established, then there is little likelihood that B2B e-commerce will flourish. If the

optimistic forecasts for the inclusion of developing countries in global markets on terms beneficial to them are to be achieved, considerable effort will need to be made to build trust in the processes of exchanging digital information. This means that policy must support and encourage the development of trust in ways that are consistent with business practices in producer countries. A failure to build trust (not simply through electronic means) is likely to lead to knock-on effects of disappointment and unsustainable trade in key product areas in global markets.

Despite strong growth rates for B2B e-commerce, the older forms of commercial practice are not likely to disappear rapidly in the industrialised countries. In Canada, for example, in 1999 only one in ten companies was using the Internet to sell goods or services and such sales accounted for only 0.2% of their total economic activity (Statistics Canada 2000). Policy makers must not be distracted by 'digital' sirens. Instead, policy makers should support improvements in all aspects of business governance so that when B2B e-commerce does become feasible, it can be integrated within business contexts that are favourable to developing country producers. Despite the fact that B2B e-commerce promises borderless trading, trade is still conducted mainly within countries or within continents. For developing countries, poor transport and distribution networks, inefficient customs procedures or trade barriers to market access continue to represent significant barriers to entry for firms seeking to trade in the global marketplace (Lopez-Bassols and Vickery 2001). This observation applies notwithstanding the growing number of web-based portals in many sectors that claim to be providing B2B e-commerce services that facilitate global trading. Table 2 is based on a survey of 77 Agriculture/Horticulture and 107 Garments/Apparel e-commerce exchange venues (defined as locations within web sites where trading parties can engage in a structured commercial exchange of products). These exchange venues are intended to support B2B e-commerce and were located between April and July 2001.² The results of part of this survey as reported in Table 2 suggest that a relatively small percentage of sites in both sectors directly (or even indirectly through referrals to other sites) provide a comprehensive range of trade support services that would be needed to enable producer firms in developing countries to trade more effectively in global markets.

² Empirical research by Dr. Daniel Paré, Research Fellow, London School of Economics and Political Science. For further details of web site mapping methodology contact d.pare@lse.ac.uk and see footnote No. 1.

Table 2 User Access to Logistical Support Services ³

Type of Support Service	Agriculture/Horticulture Percentage of Venues ⁴	Garments/Apparel Percentage of Venues
Shipping/Delivery Support Offered	34% (26 of 77)	53% (57 of 107)
Facilities Inspection (may include vendor rating, product specifications, verification, and sample services)	10% (8 of 77)	39% (42 of 107)
Certification Service is Mentioned	10% (8 of 77)) ⁵	2% (2 of 107) ⁶
Financial Services (ie. Escrow agents - allows buyers to inspect merchandise before paying, and insures that sellers receive payment for good even if buyer commits fraud)	14% (11 of 77)	37% (40 of 107)
Customs Brokering	3% (2 of 77)	11% (12 of 107)
Insurance	5% (4 of 77)	24% (26 of 107)
Travel	9% (7 of 77)	6% (6 of 107)

Source: Based on research for a project ‘E-Commerce for Developing Countries: Building an Evidence-base for Impact Assessment’ funded under the Globalisation and Poverty Programme of the UK Department for International Development by D. Paré with R. Mansell, J. Humphrey and H. Schmitz, Jan.-Sept. 2001.

Thirdly, it should not be assumed in the absence of empirical evidence that B2B e-commerce provides a means of reducing *all* transaction costs. Some costs of trading globally may

³ Support services offered either directly by the provider of the exchange venue, or by contacting a third party, or strategic partner, linked to B2B web site.

⁴ For some sites the level of support service is contingent upon the exchange structure used by trading parties to engage in a transaction, or the level of service they have contracted with the service provider. Therefore, to ensure continuity the total number of exchange Venues is used to calculate the percentage rather than the total number of web-sites examined.

⁵ The breakdown is as follows: For five exchange venues ‘mention of certification’ is related to the selling of agri-chemicals. The terms and conditions for participating in four of these exchange venues stipulate that: ‘products must be properly labelled in compliance with all Federal and applicable State regulations - Compliance is the responsibility of the Seller’. In the fifth venue, a Product Specification Sheet and Product Material Safety Data is available for chemicals sold; For one venue, vendors are encouraged to get internationally recognised quality certification (ISO 9000); In another venue, ‘certification’ relates to a specific service offered by the site provider. In this case, the firm offering this service helps companies obtain registration, quarantine certificates, and permits and licences that the Chinese government requires for the selling of foreign agricultural products in China. The providers of the eighth exchange venue are currently working on integrating certification and inspection services into their offerings.

⁶ The breakdown is as follows: The registration application form for the first venue asks potential members if they are ISO certified, and if so, to what standard (i.e. 9001, 9002, 9003, 14000). Also asks for the date certified, and the certification body; at the second venue, manufacturers can register with the site provider for an assessment confirming that the firm complies with the Apparel Commerce Code of Professionality – ‘adheres to an ethical policy and meets specified environmental standards’.

increase because of a firm's need to meet new quality, time-to-delivery, or other standards introduced by buyers or intermediary organisations. Increased costs may be associated with information and communication technology system development and maintenance, staff training, and/or organisational change. Proprietary or closed forms of B2B e-commerce continue to be developed in parallel with the open platforms offered by the Internet. Some portals are relatively open to distant producers, but a considerable number are not.

Sites supporting various components of e-commerce may offer a 'home page' with information about who to contact in order to trade or they may offer other useful information, but preparing for a trade, and conducting electronic transactions often requires membership in a buyer's club (Mansell and Nioras 2001). Achieving such entry may be expensive for developing country producers. Initial empirical evidence suggests that the relatively closed value chains where a few key buyers dominate in the selection of producer goods from a small (albeit changing) number of producer firms are being replicated when some part of their commercial practices are shifted into the e-commerce mode.

The technologies supporting B2B e-commerce do not determine the economic outcomes for producer firms. They can be applied in many different ways. It is likely that the relatively stronger expansion of closed global trading value chains will be influenced by similar economic considerations that have influenced existing trade, i.e. efforts to reduce risk on the part of influential buyers and to increase profit margins in a rapidly changing business environment. Value chain analysis in sectors such as garments, horticulture, and footwear involving firms in developing countries suggests that the process of upgrading to participate in design and other significant value adding segments of these chains presents major challenges for these firms (Humphrey and Schmitz 2000). The entry of these firms into pre-Internet based global trading relationships has often not brought the economic benefits that initially were expected (Dolan and Humphrey 2000). Government policy makers must therefore become better informed by evidence of what the insertion of the 'digital' into global value chain means for producers in developing countries.

Finally, promoting global access to B2B e-commerce to support electronic trading must go hand in hand with building network infrastructures as well as the social conditions for

building trust. If B2B e-commerce is to embrace producer firms in developing countries, institutional conditions are needed that will favour substantial investment in the telecommunication infrastructure, in Internet servers and in software. But the institutional conditions must also favour the extension of networks to rural areas, continuous network upgrading and maintenance, as well as reconfiguration to achieve the capacity and interactivity to support B2B e-commerce. Regulatory arrangements must be in place to create incentives for price reductions for the services offered. Access to networks and to B2B e-commerce applications is of little or no value to developing country producer firms if the prices of these services are out of their reach, the technical capacity of networks is inadequate to support the service applications, or the costs of terminal equipment are very high (Souter and Girardet 2000).

Another key feature of B2B e-commerce is whether the global trading environment is perceived as a secure environment. Policy institutions must be concerned with privacy protection and confidentiality, the security of network infrastructures, and the authentication and certification of traders. Institutions to support effective redress in cases where disputes arise over contractual obligations are also needed. This is a difficult issue in conventional trading environments and it is no less so when trading occurs electronically. E-commerce raises new issues for the design and functionality of automated trading sites, it requires a means of authenticating the identity of traders, and verification of the quality of the products that are traded. In many cases, commercial secrecy is important. In addition, the use of software for tracking and auditing electronic transactions makes it feasible to develop detailed profiles of inter-firm transactions. This may give 'club' members in existing value chains an edge over those firms that are not currently members of dominant buyer-led 'clubs' of traders.

In conventional trading, the relationships between buyers in the industrialised countries, export organisations, and the producer firms in developing countries are often subject to stringent monitoring and auditing of procedures to ensure the quality of producer firms' production and processing systems (Maitland 2001). Where B2B e-commerce results in a reduction of face-to-face contacts through visits by exporters and buyers to producer sites, then the data generated by electronic monitoring and auditing of performance will become an increasingly valuable resource. The close relationships of the past that have underpinned

value chains may be jeopardised by these developments if some firms seek to exploit such information to their own benefit.

A Way Forward for Policy

Internet-based B2B e-commerce may provide access to information and markets that will enable firms in developing countries to participate more equitably in global trade. There is certainly the potential for B2B e-commerce to offer a foundation for producer firms in developing countries to enter global markets or to sustain their positions in these markets on more favourable terms. But for this to occur, policy makers as well as the business sectors in developing countries, will need to turn their attention to these policy fundamentals. When the implementation of B2B e-commerce creates new obligations for producer firms and pressure for them to restructure their business processes and practices, the balance between reduced transaction costs in some parts of the value chain and increased transaction costs in other parts must be examined carefully.

The spread of B2B e-commerce in developing countries may mean that smaller firms become economically viable in global markets and that the existing bargaining power of large buyer firms in the industrialised countries is challenged in some sectors of the economy (Nielson and Morris 2001). This may permit developing country firms to increase their bargaining power to their own advantage and to the overall advantage of their countries. However, it must be expected that the pathways towards B2B e-commerce and the outcomes will differ for each country. This means that policy makers will need to be informed of the differences and similarities of experience across countries and between sectors. This suggests the need to mobilise improved co-operation between governments and the private sector within and across countries. Increased effort must be made to put the necessary institutional arrangements in place in ways that favour indigenous firms. This means critically assessing the proposed 'templates' for new institutional arrangements and ensuring that policies and practices do not simply emulate those arrangements that have been developed by buyer firms and their home governments in the industrialised countries. The logic and the costs of best practice templates should be examined carefully in each country and for all sectors. The

capacity must be developed in the producing sectors of developing countries to enable firms to choose whether, how, and when to migrate towards B2B e-commerce.

Too great an emphasis on the digital divide in the conventional sense of encouraging investment in the technical infrastructure is likely to overshadow the other policy fundamentals outlined in the preceding section. It is far easier to focus on these issues because indicators of technology diffusion, inadequate as they are, are available to most policy makers. But indicators of a country's underlying capacity to incorporate the older and newer e-commerce technologies into its economic and social structures are only beginning to be developed. In the absence of adequate aggregate indicators of the strengths and weaknesses of countries, policy makers will need to turn to the lessons that can be derived from systematic case studies of producer firm experiences. The main priority must be to learn how best to integrate the new technologies within local production contexts of commercial practice and trade.

Recognising and acting on these policy fundamentals for B2B e-commerce would provide an improved means of identifying and measuring the different pathways towards global trade. It would create a stronger basis for integrating 'old' and 'new style' commerce in ways that support the inclusion of developing country producer firms within global value chains on more positive terms.

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