

# THE INTERNET ECONOMY: CHALLENGES AND OPPORTUNITIES FOR CARIBBEAN EXPORTS<sup>1</sup>

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## Introduction and Motivation

The collection of Internet Protocol (IP) based networks known as the Internet is perhaps one of the greatest developments of the twentieth century. It has revolutionised almost every aspect of human society, not the least of which is commerce. Although the Internet as we know it is only about 12 years old its impact on business and commerce has been profound. Many have already conceptually dichotomised the world economy into the 'Internet economy' and the 'old economy', suggesting that the world is at a major transition point where the old way of life is about to give way to the new.

The Internet economy (IE) comprises the value-added chain of firms/institutions that wholly or partially transact business via the electronic networks of the internet and the array of institutions that provide the necessary infrastructure and peripheral services to make these transactions happen. The collection of agents that provide the basic platform for this Internet i.e telecommunication, hardware backbone and access service etc. is referred to as the *infrastructure level*. The *e-commerce (electronic commerce) level* comprises a miscellaneous collection of agents who, through the medium of the Internet, purchase or sell goods and services.

There are varied opinions in the Caribbean<sup>2</sup> about this new economy. E-commerce is perhaps the sector of the Internet economy that generates the most extreme views. Some merchandisers see e-commerce as a threat to their businesses, and some governments speak with trepidation about the possibility of e-commerce significantly reducing tax revenues. On the other hand some export-oriented businesses in the region are excited by the possibilities of trading in cyberspace. This article outlines in broad terms the opportunities and challenges for Caribbean exports by way of the Internet

## DEVELOPMENTS IN THE INTERNET ECONOMY

Though the Internet has its roots in the US space programme when the department of defense commissioned the Advanced Research Project Agency Network (ARPANET) in 1969, the modern Internet as we know it

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<sup>1</sup> The views expressed are those of the author and do not necessarily reflect the position or policy stance of the ECCB.

<sup>2</sup> Caribbean is used in this paper to mean the English Speaking Caribbean.



did not come into being until 1990 when *world.std.com* became the world's first commercial provider of Internet dial-up access. Since then the Internet has grown exponentially. In 1996 there were 61 million Internet users and this figure increased to over 150 million by the end of 1998. It is estimated that in 2000 the number more than doubled to over 320 million<sup>3</sup>.

Commensurate with the increase in the number of Internet users, the new economy has grown at an astronomical rate. Forrester Research estimates that the US Internet economy has expanded more than eightfold in three years, moving from US\$15.5b in 1996 to US\$128.3b by the end of 1999 (see table 1). It was estimated to have almost tripled at the end of 2001 compared with the total at the end of 1999.

**Table 1**  
**The US Internet Economy (US\$Billions)**

| Year | Infrastructure            |                                    | E commerce       |                        |                      |          |         |
|------|---------------------------|------------------------------------|------------------|------------------------|----------------------|----------|---------|
|      | Total US Internet Economy | Hardware & Telecoms Infrastructure | Access Providers | Financial Transactions | Intra-business (B2B) | Consumer | Content |
| 1996 | 15.50                     | 4.40                               | 4.20             | 0.24                   | 0.81                 | 0.58     | 5.20    |
| 1997 | 38.80                     | 8.50                               | 6.70             | 1.20                   | 7.90                 | 2.50     | 12.10   |
| 1998 | 72.50                     | 16.50                              | 11.20            | 2.50                   | 17.30                | 5.00     | 20.10   |
| 1999 | 128.30                    | 27.30                              | 19.70            | 3.20                   | 42.10                | 8.30     | 27.90   |
| 2000 | 234.00                    | 41.70                              | 33.10            | 4.10                   | 105.80               | 12.70    | 36.60   |
| 2001 | 354.50                    | 58.90                              | 48.10            | 5.00                   | 186.10               | 18.40    | 38.10   |

**Forrester Research Inc. estimates**

Source: E-Biz Business Week October 7, 1999

The largest growth in e-commerce is in the business to business category (B2B), which moved from US\$0.81b in 1996 to US\$105.8b in 2000 and an estimated US\$186.1b in 2001(see table I). This growth is reflective of the cost saving that B2B e-commerce brings to the firm. First, it reduces procurement costs by making the cheapest supplier easier to find and also reducing the cost of processing transactions. Second, it improves supply chain management. It also makes it possible for companies to have tighter inventory control, thereby reducing inventory size. A recent Goldman Sachs report estimates that firms which purchase from the Internet save from about 2.0 per cent in the coal industry to 40.0 per cent in the electronic component industry<sup>4</sup>.

In the United States Internet commerce (e-commerce) is occupying a greater share of GDP over time as shown by table 2. In 1997 Internet commerce accounted for only 0.2 per cent of GDP, however by the end of 2000 it was estimated to have accounted for 2.0 per cent.

<sup>3</sup> Computer Industry Almanac Inc.

<sup>4</sup> "A Thinkers' Guide" *The Economist*, 1 April, 2000

**Table 2**  
**Internet Commerce in the USA**

|   | 1996  | 1997  | 1998  | 1999  | 2000  |
|---|-------|-------|-------|-------|-------|
| US GDP (US\$ billions)                    | 7,813 | 8,301 | 8,790 | 9,269 | 9,873 |
| GDP Growth                                | 5.58% | 6.24% | 5.90% | 5.44% | 6.52% |
| Internet Commerce (IC)<br>(US\$ billions) | 2     | 13    | 40    | 95    | 187   |
| IC as % of GDP                            | 0.03% | 0.16% | 1.02% | 1.02% | 1.89% |

Source: The Keenan Report & MSDW, IFS CDROM

Table 3 shows the distribution of Internet users by countries. One interesting deduction from this table is that the 'Web' is predominantly a North-American phenomenon. Users from that geographical area accounted for 55.0 per cent of total users on the 'net' in 1998, with the US commanding 50.7 per cent of the number of users worldwide. Table 3 also points to the fact that the Internet is an English language phenomenon. Of the 131.1 million Internet users from the top 15 countries in table 3, almost 73.0 per cent of them are from countries where English is the official language.

**Table 3**  
**Distribution of Internet Users Among countries in 1998**

| Rank | Country          | Weekly Internet<br>Users (Mil) | % of Total |
|------|------------------|--------------------------------|------------|
| 1    | U.S              | 76.50                          | 51%        |
| 2    | Japan            | 9.75                           | 6%         |
| 3    | U.K              | 8.10                           | 5%         |
| 4    | Germany          | 7.14                           | 5%         |
| 5    | Canada           | 6.49                           | 4%         |
| 6    | Australia        | 4.36                           | 3%         |
| 7    | France           | 2.79                           | 2%         |
| 8    | Sweden           | 2.58                           | 2%         |
| 9    | Italy            | 2.14                           | 1%         |
| 10   | Taiwan           | 2.12                           | 1%         |
|      | Top 10 countries | 121.97                         | 81%        |
|      | Other Countries  | 28.93                          | 19%        |
|      | Worldwide        | 150.90                         | 100%       |

Source: Computer Industry Almanac Inc [www.c-i-a.com](http://www.c-i-a.com)



## CARIBBEAN EXPORTS IN THE INTERNET ECONOMY

### **Opportunities**

Opportunities in the Internet economy are not uniformly distributed across nations, as some might believe. Language, telecommunication infrastructure and technical competence are some of the factors that determine one country's relative strength in the new economy.

### ***Language***

The ability to effectively communicate in English is a definite advantage in this new environment as the majority of users are from countries where English is the first language. This gives the English speaking Caribbean an advantage in new economy services such as call centres that require a significant amount of conversation with the customers.

### ***Proximity to major markets***

In the trade of *tangible deliveries* (goods that must be physically delivered) on the Internet, the issue of proximity to major markets is critical, as it has implications for transportation cost and delivery time. As the largest geographical market on the Internet, the US market is important not just for its size but also for its spending power. The Caribbean region is strategically positioned in that it is one of the closest regions to this very important market.

### ***Cultural assets***

The entertainment industry is one of the fastest growing sectors in the digital economy. A recent survey on the online purchasing habits of Britons<sup>5</sup> reveals that the category of purchases with the second highest frequency by both males and females was the compact disc and video category. The Caribbean, populated by peoples of diverse ethnic and cultural origin, is thought by many to be a great repository of cultural assets. These endowments place the region at a strategic advantage to exploit the growing entertainment industry in the digital economy. The importance of this cultural endowment must not be underestimated; the English-speaking Caribbean is the world's largest producer of calypso, soca, reggae and dancehall/dub, each of which is growing in popularity internationally.

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<sup>5</sup> Nesrin Hijazi, *Online Purchasing Habits of Britons*, Commerce Net, June 7, 2000

### *Relatively high levels of functional literacy*

Functional literacy is a requirement for active participation in the digital economy. Other things being equal any country with a significantly higher literacy rate than another would be at an advantage in this new economy. Although data are incomplete it has long been believed that the Caribbean has relatively low levels of illiteracy when compared to countries in similar income groups. Four Caribbean countries reported their illiteracy rates in the World Development Indicators, 1999. Jamaica had the highest level at 14.5 per cent, which was 1.5 percentage points lower than the average for its income group (lower middle). Guyana, also a lower middle income country, reported a 2.0 per cent illiteracy rate. Trinidad and Tobago and the Bahamas reported rates of 2.2 per cent and 4.2 per cent respectively.

### *High rates of telecommunication penetration*

Telecommunication is the backbone of the Internet. The higher a country's rate of telecommunication penetration the greater should be its chances of competitive participation in the Internet economy. Table 4 ranks selected countries based on the average number of telephone mainlines per 1000 persons. The region has a relatively high rate of telecommunication penetration; all eleven Caribbean countries reporting this statistic are in the top 100 with the exception of Guyana. The high rate of telecommunication penetration would therefore prove to be an advantage in exploiting the opportunities presented by the new economy.

**Table 4**  
**Telephone mainlines (per 1,000 people)**

| Telephone mainlines (per 1,000 people) | 1996 Average | Rank |
|--|--------------|------|
| Antigua and Barbuda                    | 429          | 32   |
| St Kitts and Nevis                     | 382          | 39   |
| Barbados                               | 370          | 42   |
| Bahamas, The                           | 278          | 53   |
| Dominica                               | 264          | 56   |
| Grenada                                | 243          | 59   |
| St Lucia                               | 235          | 63   |
| St Vincent and The Grenadines          | 171          | 77   |
| Trinidad and Tobago                    | 168          | 80   |
| Jamaica                                | 142          | 86   |
| Guyana                                 | 60           | 115  |

Raking based on the 189 countries reporting data in WDI 1998



## Challenges

### *High cost of Internet access*

Active participation in the Internet economy, especially at the level of the producer, requires dedicated Internet access. Table 5 gives an indication of the price of business Internet services in the Caribbean relative to the rest of the world. A basic requirement for a firm that is doing ‘on-line business’ is *dedicated access* to the Internet. Dedicated access means that (a) the service is unlimited and (b) the customer does not connect by ‘dialing-up’ to his Internet service provider (ISP). Table 5 shows the monthly charges<sup>6</sup> on a 128 kilobyte integrated services digital network (ISDN) account. In most of the countries in the sample there is more than one ISP, however, those represented were selected on the basis of data availability and comparability in service offered by other ISPs in the sample. Each ISP offers various packages. Table 5 shows the minimum priced package, which typically includes domain name registration, five or more mail accounts and 10 to 20 megabytes of commercial World Wide Web space.

The high rates of telecommunications and Internet access in the Caribbean may limit the potential for doing business on the Internet. However, it is likely that the current liberalisation of the telecommunications market will result in the reduction of charges associated with dedicated access. This would translate into lower costs of doing business over the Internet, thereby improving the potential for Caribbean businesses.

**Table 5**  
**Business Internet Charges 2001**

| Country      | ISDN<br>(128K)/Dedicated<br>Access (monthly<br>charge)* | US\$  |
|--------------|---|-------|
| Jamaica (1)  |   | 2,420 |
| Trinidad (2) |   | 1,474 |
| Barbados (3) |   | 920   |
| UK (4)       |   | 55    |
| US (5)       |   | 150   |

*\*All prices are for the minimum cost package*

Source: (1) Cable & Wireless Jamaica Ltd, (2) WOWnet, (3) Sunbeach, (4) CIX Business Internet Solutions, (5) Infinite Communications Inc.

<sup>6</sup>CIX Business Internet Solutions charges a first year and a second year annual fee. The author added both fees and divided by 24 to arrive at the monthly figure.

**Getting noticed**

In order for trade to take place, a buyer must meet a seller. As the number of Web sites increases, the chances of a particular site being noted by consumers decreases. In July 1999 there were about 56 million IP addresses. By January 2000 that number had grown to 72 million<sup>7</sup>. This represents a growth rate of 4.3 per cent per month or 65.3 per cent per annum. Adamic and Huberman (1999) in a study covering over 120,000 web sites, found that in the case of all sites, and sites in specific categories, the distribution of visitors per site follows a universal power law. This implies that a small number of sites command the traffic of a large segment of Internet users - the signature of a winner-take-all market. Table 6 reproduces the result of their study.

**Table 6**  
**Distribution of User Volume Among Sites**  
**% Volume by User**

| % Sites | All Sites | Adult Sites | Education Sites |
|---------|-----------|-------------|-----------------|
| 0.1     | 32.36     | 1.40        | 2.81            |
| 1.0     | 55.63     | 15.83       | 23.76           |
| 5.0     | 74.81     | 41.75       | 59.50           |
| 10.0    | 82.26     | 59.29       | 74.48           |
| 50.0    | 94.92     | 90.76       | 96.88           |

Source: Adamic & Huberman

**Problems specific to small firms**

The Caribbean firm is typically small. Ba, Whinston and Zhang state that in the digital products industry the share of small firms is rapidly shrinking. They highlight three causes for the low level of competitiveness by small firms:

- (1) Limited product selection
- (2) Inadequate resources to reach consumers
- (3) The asymmetric information problem: the electronic market is inherently uncertain. Consumers do not have the indicators of product quality that they have in the physical economy. Consumers who possess asymmetric information about the quality of a product will rely on the next best proxy for quality – brand name.

<sup>7</sup> According to EDS Financial Industry, Industry News April 25, 2000



### ***Acquiring trust***

The Internet is rife with impersonators and frauds. In an environment absent of indicators of trustworthiness, online consumers are more likely to interact solely with firms whose names they recognise. This phenomenon gives a clear advantage to two types of firms:

Type A: Those firms that have a history in the ‘brick and mortar’ economy and are able to transfer that goodwill to the digital world e.g Barnes and Noble and [www.barnesandnoble.com](http://www.barnesandnoble.com).

Type B: Those firms that spend large amounts on public relations and advertising to create a brand name in the digital world. e.g. [www.amazon.com](http://www.amazon.com).

Caribbean firms are unlikely to fall into either of the above categories. In order to export in the digital economy, firms that are of neither type must find alternative ways of building consumer trust. Trust certificates may be one possible solution. Trust certificates are digital certificates issued by a certification authority (CA) e.g VeriSign and GTECyberTrust, that essentially authenticate the identity of the organisation holding the digital certificate. The use of such certificates helps to instill consumer confidence, although they may not be enough on their own to encourage consumers to trust fully. Consumers in the US for example may be reluctant to purchase a commodity from a Caribbean firm, as the firm will not be subject to the legal standards and norms governing business transactions in the United States. By engaging the services of a trusted third party (TTP) firms can overcome this problem as the terms and conditions governing the business transactions will be explicitly stated by the TTP, which would have some powers to impose pecuniary or non-pecuniary sanctions on the individual firm.

### ***Impediments from the ‘old economy’***

The Internet economy does not exist in a vacuum. As a matter of fact most of its production processes take place in the ‘old’ economy. The basic infrastructure necessary for the existence of the digital economy exists within the systems of the old economy - the education system is one such example. The Caribbean has unresolved challenges in the old economy that will definitely haunt the region in this new economy. Among these issues are:

- (a) retention of skilled personnel
- (b) the relatively high cost of factors of production versus the productivity of those factors
- (c) high taxation
- (d) administrative and bureaucratic impediments to business development.

The Internet will continue to expose Caribbean businesses to increased competition, as international firms will have greater access to the region's markets. Inefficient firms will either shape-up or exit the market. While the level of efficiency within Caribbean firms is difficult to assess, it is quite likely that limited market size and the high cost of intra-regional transport have constrained the extent to which opportunities of scale have been exploited.

## **The Beginnings of a Strategic Response**

### *Creating the enabling infrastructure*

The high cost of dedicated Internet access in the region is hampering the cost efficiency of Caribbean online business, thereby limiting the overall competitiveness of these entities. A key component of any plan for more competitive participation of regional business in the new economy must involve a strategy by governments to reduce the high price of Internet access.

Government along with the private sector must find interesting ways of increasing the participation rate in new communication technologies like the Internet. One way of achieving this (apart from lowering the cost of Internet access) is by reducing the cost of acquiring the hardware (e.g. computers) that allows for participation. The starting price of a Pentium III computer is around US\$700; this may prove quite expensive for low-income households. The Indian Institute of Science and Engineers has designed a handheld Internet device for less than \$200. In Brazil the government is seeking to produce a basic computer with Internet software for under \$300, plus they hope to put a financing scheme in place for low-income families who want to purchase these computers. The Caribbean region needs to find a similar way to facilitate universal access.

The banking sector also plays a critical role in the development of this enabling environment. Policymakers should examine the relative charges on merchant account services (these accounts facilitate credit card transactions on the Internet) by the region's financial institutions to ascertain if the cost of these services is significantly hindering the online export sector.

### *Encouraging Strategic Alliances*

The typical consumer in the online market (be it business or individual) is very time conscious. In the business to consumer (B2C) segment of the market in particular, survival depends on delivering small quantities in relatively short spaces of time. The logistics and cost of supplying to the US market or any other international market may be beyond the capability of the typical small Caribbean firm. Alliances between small firms could considerably reduce the complexity and cost involved in servicing the B2C market. The issues of high cost and



logistical complexity involved in shipping small quantities to the consumer can be addressed through the establishment of fulfilment centres in strategic geographic locations. The total cost of operating a fulfilment centre may be prohibitive for any one firm, but as a collective it is likely to be cheaper than each firm paying high prices for courier services each time they fill an order.

Firms need to attract attention to their products and services. This could prove to be quite a task for the typical Caribbean firm, with a practically unknown brand name and weak advertising dollars. Goldstein and O'Connor (2001) state that "even the best e-marketing strategy does not substitute for traditional media. Indeed, such advertising is normally viewed as an unavoidable sunk cost to establish brand name recognition." Small firms by themselves will be unable to afford the advertising sunk cost that is necessary for effective market penetration. By engaging in a cooperative effort in marketing, using a Web portal and sharing advertising cost, firms may better penetrate the on-line market.

## **Conclusion**

The forces of market competition are by no means diminished in the new economy; as a matter of fact evidence suggests that competition is stronger in this new environment than in the traditional business environment.

Market research suggests that some of the fastest growing sectors in the new economy are areas in which the Caribbean region could have a comparative advantage. The liberalisation of the telecommunications market in Caribbean countries should lower the cost of Internet access, allowing for greater participation in the new economy. However a strategy for the effective exploitation of opportunities in the Internet economy is yet to be formulated by many Caribbean countries. This strategy should be comprehensive and must be cast within the larger context of exploiting recent communication technologies for economic development.

**References**

Adamic, L.A., and B.A. Huberman, 1999. "The Nature of Markets on the World Wide Web," working paper, Xerox Palo Alto Research Center. May. [http:// www. Parc.Xerox.com/istl/groups/iea](http://www.Parc.Xerox.com/istl/groups/iea)

Demas, William.G, 1965,*The Economics of Development in Small Countries with Special Reference to the Caribbean*, (Montreal: McGill University Press).

Maurer, S.M., and B.A. Huberman, 2000. "Competitive Dynamics of Web Sites" Working Paper, Xerox Palo Alto Research Center. March. [http:// www. Parc.Xerox.com/istl/groups/iea](http://www.Parc.Xerox.com/istl/groups/iea)

Ba, S, and others, 2000, "Small Companies in the Digital Economy" in *Understanding the Digital Economy*, ed. Brynjolfsson and Kahin ( Cambridge, Mass MIT).

Whinston, A, et al, 2001. "Measuring the Internet Economy" CREC research report, (sponsored by Cisco Systems) the Center for Research in Electronic Commerce, University of Texas. January. Available via Internet: [http:// www.internetindicators.com](http://www.internetindicators.com)

The Economist, 2000, "Internet Economics: A Thinkers Guide" April 1.

Computer Industry Almanac Inc, "Press Release," *Over 150 Million Internet Users Worldwide at Year-end 1998, April 30 1999*. Available via Internet: <http://www.c-i-a.com>

Forrester, "The Forrester Brief," *Global eCommerce Approaches Hypergrowth, April 18 2000*. Available via Internet: [http://www.forester.com/Er/ Research/Brief/0,1317,9229,00.html](http://www.forester.com/Er/Research/Brief/0,1317,9229,00.html)

CommerceNet, 2000, "Online Purchasing Habits of Britons" June 7.

United Nations Development Programme, 2001. *Making New Technologies Work for Human Development, 2001, Human Development Report 2001* (New York: Oxford University Press).