

Observer

No. 224 January 2001 www.oecdobserver.org

18118801810186118318041811180911911901191

011601601

1100100100101110001111011001

A horizontal banner at the bottom of the page. It features a digital cityscape with skyscrapers in the background. Overlaid on the scene are several streams of binary code (0s and 1s) flowing from left to right. A large, prominent digit '1' is positioned in the center-right area. The overall theme is digital data and technology.

0010110001011001001

1001001

1000000000

النوع الثالث: اقتصاد الأسواق الناشئة Emerging Market Economy = ظروف

PROEGO FUBA 2001

The future of e-commerce

OECD 



9 789264 161603

a
genda
publishing



Now there's a simpler way to manage
your customer-employee-supplier-partner-
intra-extra-Inter-cross-platform-global-
way-too-complex-digital-economy net.



It's one Net. Dive in.

You can't conquer the world of eBusiness being a lonely fish in an isolated pond. You need the freedom to connect. So your employees, partners, suppliers and customers can work together. And all their different operating systems, intranets, extranets and the Internet can work as one Net. Securely and reliably. That's the strength of Novell's Net services software. It lets existing technology work together. And gives you the power to change your eBusiness as fast as the Net economy. So dive in at www.novell.com

Novell
the power to change™

Contents

Editorial

- 5 E-commerce: from hype to reality
Donald J. Johnston, Secretary-General of the OECD

- 7 Dubai: regional hub for the new economy
His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Crown Prince of Dubai and UAE Defence Minister

Dubai feature

- 8 Spreading the online culture
Mohammed Al Gergawi, Director General, Dubai Technology E-Commerce and Media Free Zone, and Chairman of Dubai Internet City
- 9 Dubai Internet City: open for business
Ahmed Binbyat, Chief Executive Officer, Dubai Internet City

News brief

- 11 Aggressive action needed if Kyoto targets to be met; Focus on global co-operation for Mr Johnston's second term; Rough waters for shipbuilders; Dot.force takes shape; Inhumane animal testing stopped

ECONOMY

- 17 E-commerce: the truth behind the web
Vladimir López-Bassols and Graham Vickery, Directorate for Science, Technology and Industry, OECD

- 20 Favourable economic outlook

- 21 New wine and old bottles
Douglas C. Worth, Secretary General, Business and Industry Advisory Committee to the OECD (BIAC)

- 23 E-commerce and taxation: a virtual reality
Interview with Simon Woodside, OECD Fiscal Affairs division

- 27 Building digital bridges: the Global Business Dialogue on Electronic Commerce
Bobby Romulo, Chairman of the Equitable Card Corporation and Chairman of the GBDe's Digital Bridges Task Force; and Cobus Stofberg, CEO of MIH, and GBDe regional co-Chair for Europe/Africa

- 29 Credit where credit is due
Joanne Taaffe, Communications Week International

- 37 E-commerce and trade: resolving dilemmas
Julia Nielson and Rosemary Morris, Trade Directorate, OECD

SOCIETY AND GOVERNMENT

- 41 Digital lessons for digital policies
Herwig Schlägl, Deputy Secretary-General, OECD

- 43 Learning to bridge the digital divide
Edwyn James, OECD Centre for Educational Research and Innovation (CERI)

- 46 Online government: a surfer's guide
Edwin Lau, OECD Public Management Service

- 48 e-Governance: one country's strategy
Lucian Hudson, the UK Government's Webmaster General

- 50 Taxing time for e-government
Liselott Kana, Head Of International Taxation, Servicio de Impuestos, Chile Finance Ministry; and Fernando Barraza, Subdirector of Informatics, Servicio de Impuestos Internos

- 52 Digital workplaces, unions and trust
John Evans, General Secretary of the Trade Union Advisory Committee to the OECD (TUAC)

- 53 Confidence and e-commerce
Marc Rotenberg, Executive Director of the Electronic Privacy Information Center (EPIC), Washington, DC

- 55 Virtual conferences: a new way to network
Natalie Domeisen, Senior Public Information Officer, International Trade Centre (ITC)

SCIENCE AND TECHNOLOGY

- 59 Threats to the information society
Taizo Nakatomi, Directorate for Science, Technology and Industry, OECD

- 64 Fighting hate on the Internet
Dr Ulrich Sieber, Professor of Criminal Law, Information Law and Legal Data Processing, Ludwig-Maximilians-Universität, Munich

- 67 Whence the web?
James Gillies, European Laboratory for Particle Physics (CERN), Switzerland

DEVELOPMENT

- 72 Navigating between Scylla and Charybdis
Andrea Goldstein and David O'Connor, OECD Development Centre

- 76 What companies need
Maria Livanos Cattau, Secretary General, International Chamber of Commerce

- 79 Sri Lanka's telecom revolution
Rohan Samarakiva, Visiting Professor of Economics of Infrastructures, Delft University of Technology; Former Director-General of Telecommunications, Sri Lanka

- 82 Hong Kong: Asia's global e-economy
Alan Siu, Hong Kong Deputy Secretary for Information Technology and Broadcasting
- 86 The Commonwealth's action plan
Dr Mohan Kaul, Director General, Commonwealth Business Council
- 88 The UN in action
Amir Dossal, Executive Director of the United Nations Fund for International Partnerships

ENVIRONMENT

- 92 How much did Harry Potter cost?
H. Scott Matthews, Research Scientist in Economics; Chris T. Hendrickson, Head, Department of Civil and Environmental Engineering; and Lester Lave, Higgins Professor of Finance and Economics, Carnegie Mellon University in Pittsburgh
- 94 Cautionary tale: Stephen King's experiment with Internet publishing

OECD.org

- 95 Teachers need more IT schooling
OECD Roundtable, Aix-en-Provence, France, 8-9 December 2000
- 95 Stormy weather
Global Warming, UNFCCC Conference of the Parties, Cop 6, The Hague, The Netherlands, 13-24 November 2000
- 96 Coming in from the cold
Opportunity For All – Best Practices in Tackling Poverty and Social Exclusion, London, 9-10 October 2000
- 97 Women in equality
Women Entrepreneurs in SMEs, Paris, 29-30 November 2000
- 97 Calendar of upcoming events
- 99 New publications

DATABANK

- 101 Net time
- 101 Phone numbers
- 102 Economic and social indicators
- 104 Turkish inflation heads downwards
- 104 Scraping the oil barrel?

مُؤتمر اقتصاد الأسواق الناشئة
Emerging Market Economy Forum



16-17 January 2001, Dubai, UAE



©OECD 2001
 ©Agenda Publishing 2001

Founded in 1962
 Published in English and French by the Organisation for Economic Co-operation and Development

OECD Publications
 2 rue André-Pascal
 75775 Paris cedex 16, France
 observer@oecd.org
 www.oecd.org

Tel.: +33 (0) 1 45 24 82 00
 Fax: +33 (0) 1 45 24 82 10
 sales@oecd.org

Agenda Publishing
 36 Great Smith Street
 London SW1P 3BU
 Tel: +44 (0) 20 7340 0700
 Fax: +44 (0) 20 7340 0701
 oecddubai2001@agendapublishing.com

CHIEF EDITORS
 Rory Clarke
 Maurice Fraser, Agenda Publishing (AP)
MANAGING EDITOR
 Diana Fortescue (AP)
SENIOR EDITOR
 Sue Kendall-Bilicki
STATISTICS EDITOR
 Eileen Capponi
ASSISTANT EDITORS
 Mark Hollingsworth (AP)
 Alison Benney
ART DIRECTOR
 Tian Mullarkey (AP)
PHOTO RESEARCH
 Silvia Thompson
PRODUCTION DIRECTOR
 Daniel Slack (AP)
PRODUCTION MANAGER
 Keith Hurst (AP)
MARKETING
 Carol Thornton, Donald King,
 Jason Smith, Jackie Wilde
PRINTING
 Grillford Ltd.

a
 agenda
 publishing

Applications for permission to reproduce or translate all or parts of articles from the *OECD Observer*, should be addressed to: The Editor, *OECD Observer*, 2 rue André-Pascal, 75775 Paris, cedex 16, France. Reprinted and translated articles should carry the credit line 'Reprinted from the *OECD Observer*' plus date of issue. Signed articles reprinted must bear the author's name. Two voucher copies should be sent to the Editor. Signed articles express the opinions of the authors and do not necessarily represent the opinion of the OECD. All correspondence should be addressed to the Editor. The Organisation cannot be responsible for returning unsolicited manuscripts.

*If information is power,
then inspiration must be the
power of our potential.

The power that moves us from
the systematic to the spontaneous.*

INSPIRATION IS THE NUMBER ONE CAUSE OF GREATNESS.



*From ideas to results.

At Compaq we believe technology
is no longer simply a
tool for information.
It's a tool for inspiration.

Redefining access.

From set time to any time.

From one place to a million places.

With the touch of a button,
we no longer fire up
just our computers, but our
imaginations.

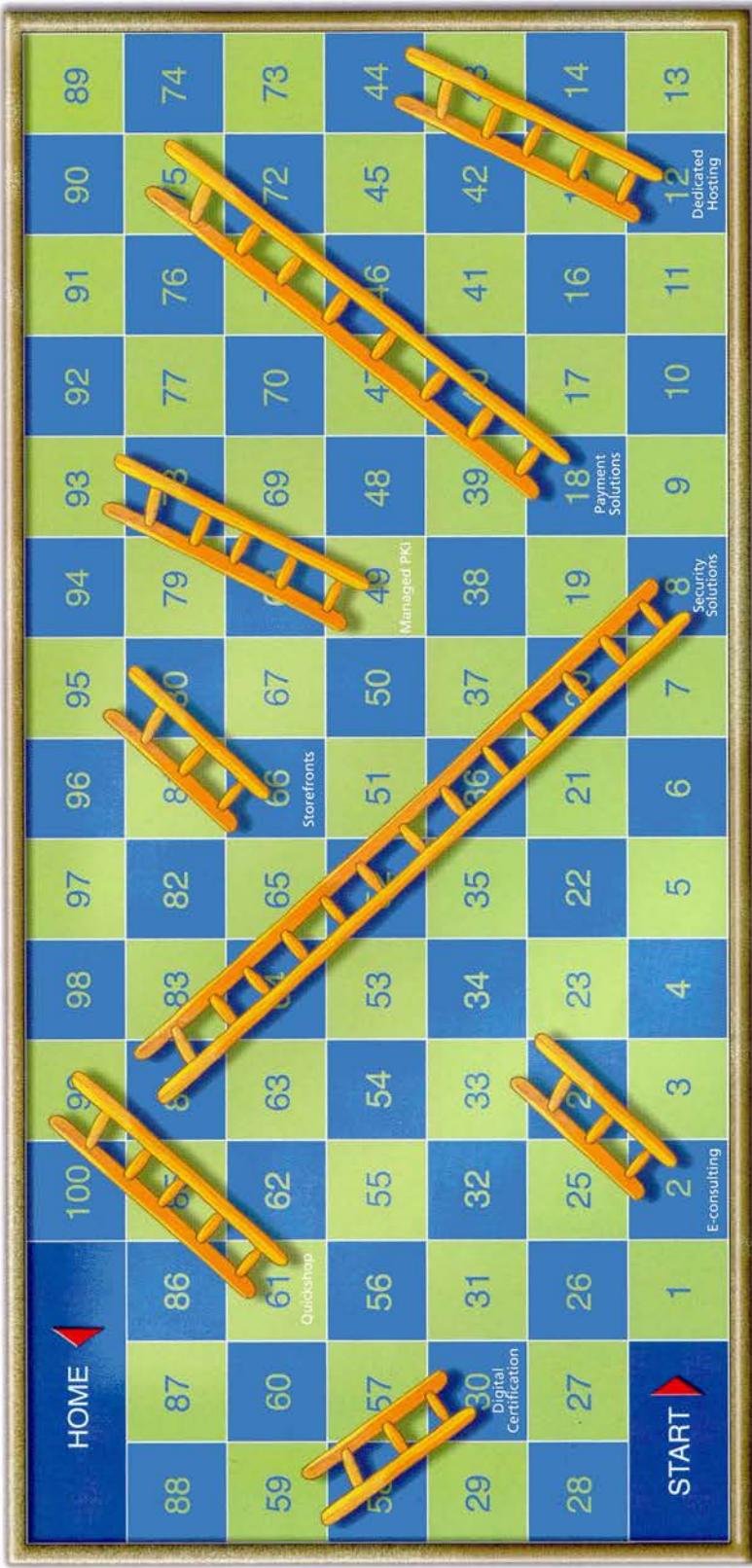
We're moving beyond
the limitations of Information
Technology to a new technology.*

*Welcome to the new IT.

Inspiration Technology
from Compaq.*

COMPAQ
Inspiration Technology

We've taken out the e-problems



...to put your e-venture securely online.

Comtrust - the only e-commerce infrastructure provider in the region.

- Digital Certification • Secure Payment Solutions
- Storefronts • Dedicated Hosting • e-Consulting

To secure your online business, call Dubai +971 4 2222277 / Abu Dhabi +971 2 6349222

or e-mail us at comtrust@emirates.net.ae

Comtrust
Trusted e-commerce solutions

www.comtrust.co.ae



E-commerce: from hype to reality

DONALD J. JOHNSTON, SECRETARY-GENERAL OF THE OECD

The dot.coms that were the darlings of the stock markets just a few months ago have gone into hibernation. I say hibernation because I believe that some of them, those that have real value, will return. Others which floated upwards on wishful thinking may never again find their way into serious investment portfolios. Indeed, many of them have already folded. What does this mean, if anything, for the future of electronic commerce?

Some will argue that e-commerce is a balloon which has been forever deflated. Others will see this down period as a temporary pause, part of a cycle in an irreversible process of doing business in new and different ways through the Internet. Both arguments are compelling, but the truth is that it is simply too early to tell. For my part, cautious optimism is the right approach.

We have here an application of Information and Communication Technology (ICT) which is really "transformational" in many ways. Much of the increase in business productivity in recent years, particularly in the United States, can be attributed to ICT, which is seen as a key driver of the so-called new economy. The question is, will new technology (and ways of doing things) spread through the retail and wholesale sectors of the economy, and transform the way that buyers and sellers behave? In my view it will, but perhaps it will take more time than many optimists thought.

The fact is that ICT is not a passing phenomenon that will simply disappear to be displaced by some other technology that is in the pipeline. This cannot be said of all innovations before it. At the Chicago World's Fair of 1893, one wise person predicted that air travel was the way of the future... not by aircraft (yet to be invented) but by balloons tethered to cables, linking cities like an Alpine cable car! And because pneumatic tubes carried mail of the day in major cities, another prediction foresaw pneumatic tubes carrying cargo across the United States. Such are the dangers of linear projections!

Nor is it hard to overestimate the impact of new technologies. Take nuclear energy. Lewis Strauss, then chairman of the Atomic Energy Commission, said in a speech in 1954: "It is not too much to expect that our children will enjoy in their homes electrical energy too cheap to meter." Nuclear energy has been many things over the years, but free is not one of them.

To some extent we have been swept away by the promise of new and powerful communications technologies. Yet e-commerce has brought clear benefits. A lot of us already do banking electronically, make travel arrangements, order goods (even food) online. This is now routine for many of us, even among my friends who a short time ago would have been regarded as techno-peasants.

On a larger scale, because communications have got cheaper – even unmetered in the case of Internet access in some countries – e-commerce has brought the world's markets (and people) closer

together, opening up real growth opportunities for developing and developed countries alike. Regardless of what may be happening to dot.coms, this is one contribution of ICT that cannot be reversed.

True, there is work to be done to get all countries "wired up" so to speak, to reduce the so-called digital divide between the technology haves and have-nots. The newly formed Dot.force, which brings together the G8 countries, eight developing countries, the European Commission, and some 13 multilateral organisations, including the OECD, is therefore an important step (see News brief).

But such initiatives apart, there are good reasons to be confident that e-commerce will continue to spread at an ever accelerating pace. Telecom deregulation and technology improvements will keep driving costs down and accessibility up for a start. Nevertheless, e-commerce is new and its progress depends on solving some problems. There is some distance to go before e-commerce wins the kind of consumer confidence buyers and sellers in the physical world take for granted. Many who freely give their credit card number over the phone refuse to launch it into cyber space. They worry about confidentiality, about legal recourse in the event of defective products, non-delivery of goods, and the like.

These and other issues are reflected in the pages of this *Observer* magazine: from taxation and trade to government/citizen relations, from online privacy and consumer protection to education and development, from understanding the technology to overcoming its abuse.

The OECD takes these questions very seriously indeed. It works closely with non-OECD countries, some of whom (like Dubai or Hong Kong, as we see in this magazine) have been showing the way forward in e-commerce development. OECD works closely with businesses and civil society groups from developed and emerging markets, in an attempt to find solutions to these international problems. Not everyone agrees with everyone else on how to go forward. Governments have yet to agree on some aspects of e-commerce taxation, for instance. The OECD's job is to find consensus so that we can move ahead with some confidence.

E-commerce is a marvellous thing. And while it may be suffering from hype today, I see it as a harbinger of the reality of tomorrow. ■

Rolls-Royce Corniche



شركة الحبتور للسيارات (ذ.م.م.)
AL HABTOOR MOTORS CO. (L.L.C.)



The Corniche is a gloriously stylish, effortlessly capable machine – every inch a hand-built Rolls-Royce. In recent years, there has been significant investment to make these motor cars as technically advanced as they are flawlessly hand-crafted. And in every detail, from the mirror paint finish to the dynamics of ultra-smooth handling on the road, it certainly shows.



Certainly, the new Corniche looks the part. In external style, it is characterised by a continuously flowing wing line that sweeps the length of the coachwork. At first glance it is very contemporary, but aficionados of the marque will recognise that it pays homage to the classic design studies of Osmond Rivers.

To step into this Rolls-Royce is to enter another world. Interior furnishings and appointments of the Corniche demonstrate levels of workmanship and refinement that cannot be matched outside Crewe. Rolls-Royce has its own way with natural, hand-finished fine wood veneers, featuring subtle cross-banding and boxwood inlay.

The upholstery is finest, hand stitched Connolly hides. Deep-pile Wilton wool carpets grace the floor. Maybe we should put more emphasis on the ergonomic excellence of the responsive controls, on the wealth of precise instrumentation. However, there is no escaping that what most sets apart a Rolls-Royce interior is the effect on all the senses of its sumptuously refined ambiance. The Corniche is quite simply a magical place to be.

Performance is the aspect of motoring that most usually excites headlines. But it has its own distinctive meaning in the context of a Rolls-Royce. Perhaps the best way to describe it is that it should be taken as read – unspoken, quietly assumed. The company modestly chooses to describe the performance of its Corniche convertible as more than adequate. That has to be something of an understatement when it has a Crewe-built, 6.75 litre, light pressure charged V8 engine with prodigious reserves of torque – no less than 738 Nm (544 lbs.ft) between 2,100 and 2,300 rpm.

There lies the clue. Even when the V8 is scarcely more than ticking over, its engine management system, with a precision adaptive automatic transmission system, means that the potential power on tap is enormous. The Corniche is effortlessly capable of accelerating from 0 to 60 mph in a remarkably quick 8 seconds and it will whisper on, should a suitable occasion arise, to a maximum speed of 135mph.

Effortlessly capable is the point. Every system of the Corniche, from its power train to its hydraulically controlled suspension, from its 340 micro-alloy brake discs to its unique 17-inch alloy shod with 225/55 WR 17 white walls tyres, has been developed and refined to ensure that performance on the road is as unobtrusively swift as it is safely assured. More than adequate perhaps says it all in this context, but the Corniche actually has truly remarkable agility.

Those who appreciate it are likely to be accustomed to the enjoyment of life's most exquisite pleasures and will have a high regard for artistry in all its forms. The Corniche will become part of their collection of most treasured possessions, a motor car that is – quite literally – crafted only once in a lifetime. It could be that, for collectors and aficionados of the truly hand-built, Crewe-built Rolls-Royce motor car, this one might prove to be quite literally its ultimate expression. ■



Dubai: regional hub for the new economy

HIS HIGHNESS SHEIKH MOHAMMED BIN RASHID AL MAKTOUM, CROWN PRINCE OF DUBAI AND UAE DEFENCE MINISTER



Dubai Internet City is multifaceted and not just aimed at e-commerce companies. It will encompass all IT-related sector companies that are venturing into the field of electronic business. Our marketing strategy is both broad-based and extensive, and we have developed a critical path to meet our time frames.

Everyone is talking about the new economy revolution. Every company is considering getting into e-commerce, and

although current figures seem to indicate that the transformation to the technologies of the digital economy in the Middle East and particularly the Gulf region is in its infancy, we have recently seen positive signs of a qualitative shift in this domain.

The region is indeed at the threshold of a major technological revolution, which promises to infiltrate all areas of development. There is overwhelming interest in conducting business through the Internet, making it a vital and irreplaceable means for enhancing efficiency and competitiveness.

Dubai has long been recognised as the leading regional trading hub of the Middle East. With the advent of Dubai Internet City, that position has been broadened into cyberspace with the same quality of infrastructure and service as the facilities that put Dubai on the map in the first place – Jebel Ali Port and Free Zone, Port Rashid, Emirates and Dubai International Airport.

As the world enters a new phase of development wherein the rules and criteria for competition and excellence have been profoundly altered, emerging economies in various parts of the world find themselves facing new types of challenges, requiring new approaches and new techniques.

The new economy thrives on knowledge, innovation and entrepreneurship. It is being shaped by rapidly evolving technologies. Its most crucial resource is talent. Its most crucial element is speed. It is

creating a borderless world in which goods and services are offered 24 hours a day, seven days a week, around the world and are ordered and accessed at the click of a button. For this new world, an idea whose time has come – Dubai Internet City, the ideal physical location for new economy businesses who want to serve a region that stretches from Egypt to the Indian Sub-continent it is from South Africa to the CIS, with over two billion people. And the perfect hub for new economy industry – established IT companies, multi-media businesses, telcos, Internet start-ups, service companies, remote service providers, incubators, venture capitalists and professional firms.

Building upon a firm belief that these developments should be addressed seriously if we are to maintain our competitiveness as a growing regional centre we have worked very hard over the past few years to draw up, and implement, a Strategic Development Plan. This plan is mainly focused on transforming to the technologies of the new economy, continuing the process of diversification of the economy away from the oil sector, and initiating investment promotion policies.

With the extraordinarily proactive business mentality of Dubai's residents and citizens, and our strategic support, we have moved quickly into this new mode of operation and we now have one of the most dynamic and diversified regional economies. Recent data shows the contribution of the non-oil sectors in gross domestic product soaring and dependency has decreased.

We are confident that Dubai will continue its vital role in serving the economies of the region as a whole; we are firmly committed in the UAE to continue our efforts to maintain and further improve a dynamic business environment, which provides business with genuine opportunities for growth and prosperity.

Dubai Internet City is founded on the same formula of success upon which Dubai's current prosperity is based. Initiated by the founder of Dubai's modern advancement, our father, the late Sheikh Rashid Bin Saeed Al Maktoum, this formula comprises three major components, namely: intensive government investment in a modern infrastructure; creation of an appropriate legislative and legal framework which provides a sound basis for growth and helps attract local and foreign investments; and the establishment of a strong partnership with the private sector.

While priding ourselves on the current strong partnership between the government and the private sector, we remain constantly eager to elevate this relationship to new horizons. Within such a context, we shall continue to review and upgrade rules and regulations, and establish an institutional culture which supports growth and development of the various business sectors. Meanwhile, we shall continue to upgrade the country's infrastructure, enhance the services of various government institutions, and adopt an open-minded, innovative approach which encourages initiative, creativity and innovation. ■

Spreading the online culture

MOHAMMED AL GERGAWI, DIRECTOR GENERAL, DUBAI TECHNOLOGY E-COMMERCE AND MEDIA FREE ZONE, AND CHAIRMAN OF DUBAI INTERNET CITY

The new economy thrives on knowledge, innovation and entrepreneurship. It is being shaped by rapidly evolving technologies and is creating a boundary-free world in which goods and services are available 24 hours a day, seven days a week, around the world, all at the click of a button.

At Dubai Internet City, talent is a crucial resource and speed is an essential element. Dubai Internet City provides the ideal physical location for new economy businesses which want to serve a region that stretches from Egypt to the Indian Sub-continent, and from South Africa to the CIS, with over two billion people.

The value of e-commerce within the Middle East alone, is expected to increase from US\$400 million in 2000 to US\$3 billion in 2003.

Dubai Internet City is the perfect hub for the new economy, harbouring established IT companies, multi-media businesses, Internet start-ups, service companies, remote service providers, incubators, venture capitalists and professional firms.

Already established as a growing regional centre for information technology, trade and business, Dubai now plays a pivotal role in the region's technological revolution, which recently received a tremendous boost from the establishment of Dubai Internet City as a base for the new economy. Dubai Internet City is expected to play a crucial role in the new era of the digital economy, probably similar to the crucial role once played by the Dubai Creek deepening project in turning Dubai into a thriving regional centre for trade, back in the 1950s.

The international IT industry looks upon Dubai Internet City as a dynamic centre, which will actively

contribute to the process of transformation to the technologies of the new economy, within a vast area with huge growth potential.

Data on e-commerce exchanges provide a glimpse of what the future is likely to bring about. The value of e-commerce within the Middle East alone, is expected to increase from US\$400 million in 2000 to US\$3 billion in 2003.

Meanwhile, the number of Gulf firms and companies using, or planning to use, e-commerce is expected to multiply three to four times within the coming five years, in keeping with international trends in this field. E-commerce is expected to form some 10-25% of the operations of major companies in the Gulf region, towards the middle of the current decade. We may note, however, that some companies have already completed preparations to achieve the said ratio before that date.

This is further supported by a widespread conviction among the management of institutions and firms in the region that time is not on their side. They are left with little time to make the shift towards working through the Internet, utilise new technologies, adapt their work patterns and strategies in such a way as to meet the requirements of the upcoming stage, and face up to the fierce competition unleashed through cyberspace.

This in turn also coincides with the spread and establishment of an Internet culture in the region, reflected in the rapid growth in the number of Web users. The UAE, for example, ranks in the top 18 countries world wide, in terms of ratio of Internet users to total population – a factor that is likely to play a crucial role in accelerating the transformation process which is expected to occur within the various business sectors. ■

Dubai Internet City: open for business

AHMED BINBYAT, CHIEF EXECUTIVE OFFICER, DUBAI INTERNET CITY

Dubai Internet City's objective is to nurture the growth of the new economy and the IT industry as a whole, by providing a cutting-edge, high bandwidth, internet services and telecommunications, intelligent infrastructure, real estate, company registration and facilitation, to support any level of service a client might wish to use for efficient operations. The City, which was completed in a record 364 days, gives us a technology platform fit for the 21st century. It also fulfils the vision of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Crown Prince of Dubai and UAE Defence Minister, to provide the e-world with a world-class ground base for every virtual company.

Dubai Internet City's existing buildings and future expansions have been equipped with the latest technology from world-leaders and DIC is committed to providing the best in future technological developments.

Dubai Internet City has already attracted more than 180 firms, mostly international companies operating in various IT industry sectors. The number of companies applying to work in the City has run well beyond preliminary expectations. Because of this we have decided to proceed with the implementation of the second phase of Dubai Internet City even before the first phase is completed. The latter was launched on October 28, in a huge ceremony attended by more than 2000 representatives of the industry from various parts of the world.

The interest of the international IT industry in the City culminated in decisions by many leading firms, such as Oracle, Cisco, Microsoft, Siemens and IBM, to set up their facilities within the City, which has already established itself as a base for the new economy. DIC is well equipped to play a pivotal role in supporting and promoting the IT revolution within a vast geographical area covering the Gulf, Middle East, the Indian Subcontinent, Central Asia, the CIS, North and South African countries.

Boasting an ultra-modern infrastructure, and enjoying strong support from the international IT industry and full financial and political support from the Dubai Government, the City is indeed in the best of positions to play such an important role.

Dubai Internet City is committed to providing a business environment that would enable companies to achieve higher standards of efficiency, mainly through a highly modern infrastructure in information technology and communications, and world-class support services.

The City is also keen on creating an ideal environment for growth and flourishing of the new economy. An environment wherein software and multimedia developers, IT firms, communications companies, service providers and suppliers all work side by side, thereby providing a solid base, not only for the growth of operations of each company within the City, but also for the creation of new business opportunities.

Companies operating within the City enjoy a set of investment promotion incentives including 100% foreign ownership of projects, corporate tax exemptions, streamlined government procedures, 50 years land lease contracts, competitive prices for rendered services, cost effective business sites, in addition to facilities for financing, training, education and research.

Moreover, companies operating in Dubai Internet City shall benefit from Dubai's position as an important regional and international centre for the IT industry and a gateway to some of the world's fastest growing computer markets.

Dubai Internet City itself represents a major technological stride in the UAE's confident march through the 21st century. Combined with the easy, enjoyable and economical lifestyle of Dubai, DIC presents itself as a preferred option both to the conglomerate multinational and the start-up entrepreneur. ■

Take Toshiba.
Take the World.



First we made it hot. Then we made it cool.

PORTEGÉ 3440CT



Toshiba's Portégé B5 ultraportables have always been a hot favourite with the PC industry and end-users alike, garnering all the prestigious awards for their ultra-thin, ultra-light design and break-through technology. Now Toshiba introduces the coolest advance yet - the new Portégé 3440CT. Toshiba has harnessed the high-performance Intel® Mobile Pentium® III processor 500MHz with an innovative NEW Super Cooling technology that efficiently disperses heat, thus delivering levels of computing performance and user comfort that engineers at one time thought impossible. At 19.8mm thin and 1.55kg light, with silver metallic magnesium alloy casing and sculpted contours, it's the most ultraportable powerhouse Toshiba has ever built.



Packed with a 6GB hard drive, 64MB memory, 8MB of video memory, and the ability to support up to 9 hours battery life with an optional high capacity battery slice, the Toshiba Portégé 3440CT allows you to experience the hottest mobile technologies available today. What's more, forget about standard TFT displays and hefty power consumption. When you have Toshiba's latest talk-of-the-town Poly-silicon TFT display, your eyes can feast on crystal bright, 11.3-inch display at 1,024 x 768 resolution. Plus, Poly-silicon TFT technology guarantees you increased reliability and greater durability, along with longer battery life and a wider viewing angle.



If you're looking for flexibility and expansion for convenient access to corporate network, printers and USB accessories, look no further than Toshiba's Portégé 3440CT. It comes standard with a USB Floppy Disk Drive and a LAN Port Replicator, which features Intel® 10/100 Ethernet connectivity. And accessing DVD and a second HDD becomes a cool breeze with the optional Multi Media Port Replicator.

Little wonder Toshiba Portégé 3440CT is so hot. Yet so cool!

In Touch with Tomorrow
TOSHIBA

 **al-Futtaim Electronics**

Bur Dubai: Adjacent to Burjuman. Tel: 3513771, 3515004, Fax: 3514254. Abu Dhabi: Tel: 6733614, Fax: 6733615.
Service Centre: Dubai: 2825112, Abu Dhabi: 6733004. www.afftoshibauae.com

www.toshiba-acmea.com

Design and specifications subject to change without notice. Intel, the Intel Inside logo and Pentium are registered trademarks of Intel Corporation. Microsoft, Windows and the Microsoft logo are the trademarks of Microsoft Corporation. All other products and names mentioned here are the property of their respective companies.

GMASCO 510019863/2000

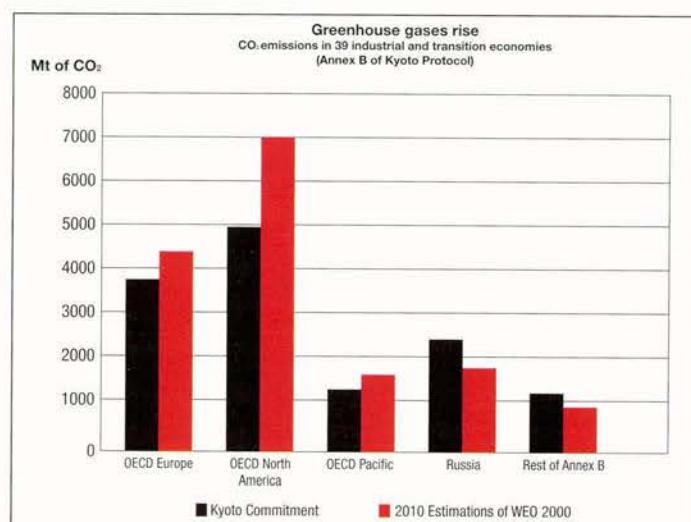
Aggressive action needed if Kyoto targets to be met

Aggressive action is needed in future if OECD countries are to meet their Kyoto Protocol targets for reduction of greenhouse gas emissions, the International Energy Agency (IEA) says in its *World Energy Outlook 2000*. The projections in the book indicate that if current policies and measures in OECD countries are not strengthened, energy-related CO₂ emissions in 2010 are expected to still be significantly higher than required under the Kyoto Protocol. The *World Energy Outlook 2000* projects that global energy use and related CO₂ emissions will continue to increase steadily over the next two decades. Projected world primary energy demand is seen increasing by 57% between 1997 and 2020, while CO₂ emissions from the burning of fossil fuels increase by 60%. Fossil fuels will account for 90% of the world primary energy mix by 2020 – up slightly on 1997.

Different regions' shares in world-energy demand will shift significantly, with the OECD share declining in favour of developing countries. A sharp increase will occur in international trade in energy, especially oil and gas. The main consuming regions, including the OECD and dynamic Asian economies, will become considerably more reliant on oil and gas imports, the report says. The latest edition of the *World Energy Outlook* was released at the COP 6 climate

change meeting in The Hague in November (see OECD.org). ■

- ◆ IEA, *World Energy Outlook 2000*, 2000
- ◆ Visit the IEA web site at <http://www.iea.org>



Focus on global co-operation for Mr Johnston's second term

Co-operation will be the keyword for OECD secretary general Donald Johnston's second five-year term in office, starting in June 2001, as OECD members work so that citizens in all countries can benefit from a globalised economy.

The organisation announced that it was renewing Mr Johnston's mandate at a ceremony in December marking the admission of Slovakia as the OECD's 30th member. During the past four years, Mr Johnston, a former member of the Canadian

government, has redefined the organisation's priorities and overseen a process to improve its efficiency, including a reduction in the OECD's overall budget. He has also extended the OECD's contacts with non-members by launching a co-operation agreement with Russia and building on co-operation with China. The OECD now works with 70 non-member countries at various levels of business.

"We must in concert make globalisation work in the interests of all, especially

those vulnerable to rapid change in the developed world and the poor of the developing world," Mr. Johnston told a conference on international policy for the 21st century in Berlin on 11 December. "This is our window of opportunity to bring 1.2 billion people out of abject poverty through sustainable trade and development in their own countries. Sustainable development from an environmental, economic and social perspective is fully compatible with the evolution of a strong, vibrant and fair

international marketplace... but it requires strong policy underpinnings and broad international co-operation." ■

A lawyer by profession, Mr. Johnston held a number of posts in the Canadian government, including that of president of the Treasury Board. He took up his post at the OECD on 1 June 1996. ■

- ◆ You can read the full text of Mr Johnston's speech at <http://www.oecd.org/media/release/johnstonspeechBerlin11dec2000.htm>

Rough waters for shipbuilders

World shipbuilders are facing a tough time, with demand expected to fall slightly in the next few years before peaking in 2004, the OECD working party on shipbuilding said at its December meeting. While orders have been relatively strong in 2000, and prices have increased, this has not yet brought most shipbuilders into profitability, and demand forecasts are not very encouraging.

Demand is expected to peak at around 20 million compensated gross tonnes (cgt) in 2004, slightly higher than an estimated 18.4 million cgt in 2000, working party chairman Salvatore Salerno said. But demand could be pushed up to a peak of 21.7 million cgt if proposals by the

International Maritime Organisation to accelerate the phasing out of certain single hull oil tankers in the wake of recent tanker accidents are adopted.

The trouble is that shipbuilding capacity is expected to increase over the next five years, even though existing capacity could easily cope with the expected peak in demand. In recent months there has been a strong recovery in shipping, with carriers reporting their highest earnings for 30 years, but price levels are still more than 20 percentage points below 1997 levels and on the whole have not allowed shipbuilders to restore profitability.

The working party agreed to update the 1981

understanding on export credit for ships while awaiting implementation of the 1994 shipbuilding agreement, which provided for an end to subsidies and the application of anti-dumping provisions to shipbuilding, backed by a binding dispute discipline. The European Union, Japan, Korea and Norway have ratified the Agreement, but the United States has yet to clarify its position, so the agreement has not come into force. ■

- ◆ Read the full statement from the shipbuilding working party at <http://www.oecd.org/media/release/nw00-133a.htm>
- ◆ Find out more about the OECD's work on shipbuilding and transport at <http://www.oecd.org/transport/>

Inhumane animal testing stopped

OECD members have agreed to abolish a test of chemical products widely criticised as inhumane to animals. The LD50 Draize test was developed almost 50 years ago to determine whether chemical products were harmful to humans and wildlife. Such information is crucial if someone is accidentally exposed to chemicals at home or in the workplace, and in the case of chemical spills as a result of transport accidents. But the LD50 Draize test involved dosing at least 20 animals with a test substance that might be expected to kill half of them within two weeks. New tests have since been developed that can indicate whether a product is dangerous

to humans and wildlife by testing and killing far fewer animals.

The agreement to abolish the LD50 Draize test was taken at a meeting of the OECD chemical committee which groups delegates responsible for national chemical policies in their own countries. The OECD has developed a manual of internationally accepted Test Guidelines cataloguing accepted tests and their method. The guideline covering LD50 Draize is to be cancelled, and replaced by three new items covering new, more humane, methods. ■

- ◆ Visit the OECD website on the Test Guidelines Programme at <http://www.oecd.org/ehs/test>
- ◆ For queries or comments, contact herman.koeter@oecd.org

Dot.force takes shape

The digital opportunity taskforce, or Dot.force, has been quick to start work after being created by the G8 countries in July to ensure the developing world does not get left behind in the e-revolution. The Dot.force is to make recommendations on concrete global action to bridge the international information and knowledge divide to the next summit of the G8 leading industrial nations in Genoa in July 2001. Its first meeting in Tokyo in late November brought together the G8 countries, the European Commission, 13 multilateral organisations including the OECD, and eight developing countries including India, Brazil and South Africa.

The Dot.force's job is to focus on the policy, regulatory, infrastructure and human capacity framework required to overcome the digital divide. It is charged with making concrete suggestions on creating the policy, regulatory and telecom networks needed for the digital age, as well as widespread access at affordable cost. It will also look at ways to help education keep pace with the demands of a rapidly changing world.

There will be two additional Dot.force plenaries, one in a developing country in March, and a final meeting in Italy towards the end of May. In addition, Dot.force members may decide to take advantage of the numerous additional meetings being organised on ICT-related issues in various countries to hold 'parallel' meetings of the Dot.force. One such meeting, on how development programmes can help bridge the digital divide, is being co-hosted by the OECD, the United Nations and the World Bank in Paris in March. A Dot.force technical meeting is expected to take place in Dubai on 18 January, just after the OECD's Emerging Markets Forum on Electronic Commerce. ■

information development

means

economic development

Drive your Economy
with Information.

Drive your Information with
Terra Firma Consulting.

TERRA FIRMA CONSULTING

- Full-Scale SAP Implementations
- World's Leading SAP Consultants
- North America's Leading SAP Training Partner
- Executive-Level Staffing & Recruiting
- IT Industry Staffing & Recruiting



SAP

SIEBEL.

bmcsoftware

INSYST™

TFC United States

610.566.1905 Phone

Rosetree Corporate Center
1400 N. Providence Rd.
Ste. 6000
Media, PA 19063

www.tfconsulting.com

TFC United Kingdom

+44 7909 687855 Phone

The Gables, Southill Rd.
Broom
Beds
UK SG18 9NN

globalit@tfconsulting.com

TFC Kuwait

+965 2419701 Phone

P.O. Box 665
Safat
13007 Kuwait



Software AG – state-of-the-art technology for electronic business

Today, the success formula for decision makers in all sectors of industry is one and the same: "to have the right information available at the right time". What might seem very simple at first, can quite often turn out to be difficult. The way enterprises cope with this decides on their success or failure. With products and services that support enterprises' long-term needs to develop, integrate and maintain their IT systems, Software AG helps its customers reach for the impossible.

Our mission

"To be the leading supplier of system software and services for mission-critical electronic business solutions."

A worldwide company

Software AG, Darmstadt, Germany, is Europe's largest system software provider and a major global player offering cutting edge technology for data management and electronic business. Since 1998 the company has focused its development activities on XML products for the Internet. With more than 2,600 employees and representatives in 60 countries, Software AG achieved sales revenue of Euro 366 million in 1999. Its distribution and technology partners include market leaders such as IBM, Microsoft and SCO as well as innovative IT solutions providers like Extensibility, Softquad and Intranet. Software AG's products control the central IT processes of thousands of renowned companies worldwide. Some examples of these are Lufthansa, British Sky Broadcasting, ZDF, Dresdner Bank AG, Deutsche Bahn AG (German Rail), BP and VIAG Interkom. Software AG is listed on the Frankfurt Stock Exchange (MDAX, Security identification number 724260 / SOWG.F).

Software AG's technology expertise is based in three major product areas:

Database management systems:

Adabas, Adabas D and Tamino, the Power-Database for the Internet – 100% pure XML.

Application development environments:

Natural, the application engineering environment and Bolero, the Power-Tool for the Internet – Java, XML and more... .

Middleware:

EntireX, the Power-Link to the Internet – Software integration across the Enterprise.

Software AG also provides comprehensive services

- to seamlessly integrate its technology into customer-specific environments;
- to provide full business solutions based on its technology;
- to train its customers and to support the optimal use of its products;
- to adapt IT systems to future trends .

Profitable growth above the industry average

715.6 million DM revenue in 1999

129.7 million DM profit before tax in 1999

2,639 employees (12/31/1999)

The positive business development, above that of the IT industry's average, was recorded worldwide. One driving force was strong new product sales, such as EntireX middleware and Tamino Database. Another factor was a significant rise in the licence revenue from traditional products, the Adabas database management system and the Natural application engineering environment. New products like Bolero and Tamino will contribute significantly to the company's future growth and success.

The products

Tamino: The XML Platform for Electronic Business
Tamino XML Platform is a complete suite of products based on XML and Internet standards. Tamino XML Platform supports all aspects of application development, data management, data and application integration and XML messaging, and includes a high-performance XML database, designed to enable fast implementation of XML-based electronic business processes.

Application integration with EntireX

The heart of EntireX is the message broker technology. Another integral part of EntireX is the DCOM technology, which has become a de-facto industry standard. EntireX helps integrate all classes of applications across a variety of platforms and allows users of Windows systems to integrate their applications with Unix systems and mainframes on the basis of the DCOM standard. In the future, EntireX will serve as a component bus which can be smoothly extended.

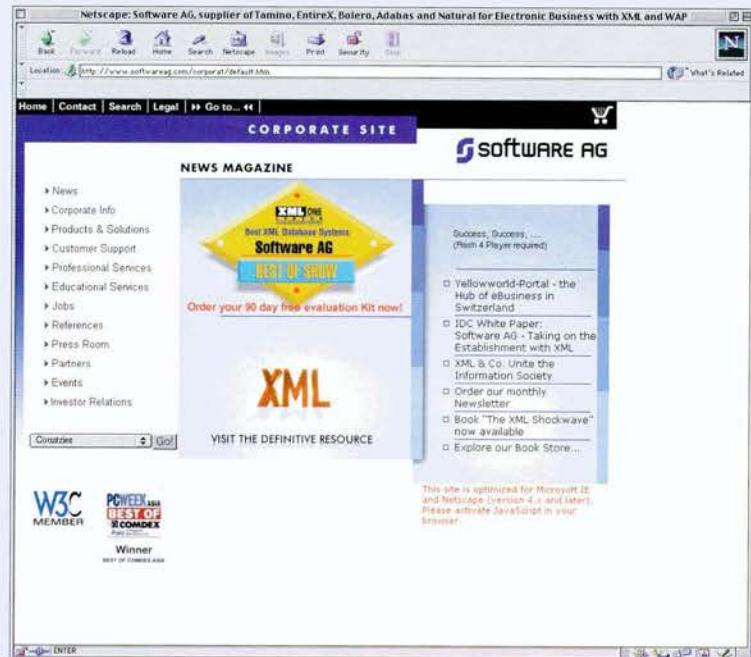
Electronic business with Bolero

Bolero, Software AG's new Application Factory for Electronic Business, is an object-oriented application development and integration environment that enables enterprises to create electronic business applications and deploy them on any platform as ready to run Java byte code. For cross-system integration purposes Bolero supports DCOM and Corba interfaces.

The database management system Adabas, launched in 1971, paved Software AG's way to international acclaim. Combining low cost of ownership and high performance for very large transactional systems, Adabas today ranks among the world's most successful database products. The fourth generation language Natural, launched in 1979, is an industry standard. Facing the needs to integrate heterogeneous client-server environments, Software AG created the Entire middleware product line in the late 80s. This was recently extended by the DCOM technology and renamed EntireX. Although Software AG is active in creating new products, one of its primary goals is to protect its customers' IT investments and it continues to support and enhance Adabas and Natural.

Partnerships

Software AG and IBM both support the Enterprise Java Beans architecture for creating and executing electronic



business applications. Both companies are collaborating to ensure that applications or components developed using Bolero can be deployed in either IBM's new Component Broker or CICS transaction server runtime environments. Close relations with Microsoft enabled the extension of the EntireX middleware product line with the DCOM technology. EntireX provides DCOM for Unix and mainframes. In order to assure easy access to the Java technology, Software AG has become a licensed software partner to Sunsoft. The partnership with Compaq ensures the availability of products on Compaq and Digital platforms. Numerous agreements with software companies around the world complement these partners. ■

Software AG, Uhlandstr. 12, 64297 Darmstadt, Germany

www.softwareag.com

Tel: +49-6151-92-3255 Fax: +49-6151-92-3220

e-mail: middle-east@softwareag.com

Order online at:
www.xmlstarterkit.com

**XML Starter Kit
FOR FREE!**



Tel.: +49-6151-92-3255
Fax.: +49-6151-92-3220
E-mail: middle-east@softwareag.com

software AG
THE XML COMPANY

E-commerce: the truth behind the web

VLADIMIR LÓPEZ-BASSOLS AND GRAHAM VICKERY, DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INDUSTRY, OECD

E-commerce is the buzz word of the new century. Much of the talk about it is hype and fancy, but not all. How big is e-commerce really?

Electronic commerce has been a much used and abused term. A lot of hopes have been placed in it, a lot of promises made of it, and yet its precise meaning has not always been easy to pin down. One thing is clear: in terms of transactions e-commerce is large – equivalent to the total value of industries such as pharmaceuticals and computer hardware – and growing.

Current estimates put the value of e-commerce at around US\$650 billion worldwide in 2000. This amount covers transactions between businesses (b-to-b), and sales from businesses to consumers (b-to-c), though it does not include government transactions or those between consumers. Estimates of the value of b-to-b e-commerce in the United States in 2000 vary widely, ranging between US\$100 billion (IDC) to US\$1.2 trillion (Boston Consulting Group). Many such estimates have often been accompanied by very rosy projections of up to ten-fold growth over the next few years.

Official data from national statistical offices appear more realistic. The US Department of Commerce measures online retail sales (b-to-c), which were US\$6.4 billion in the third quarter of 2000, or around 0.8% of total retail sales. Figures from the Australian Bureau of Statistics show that around 0.4% of total sales/orders were received in Australia via the Internet by

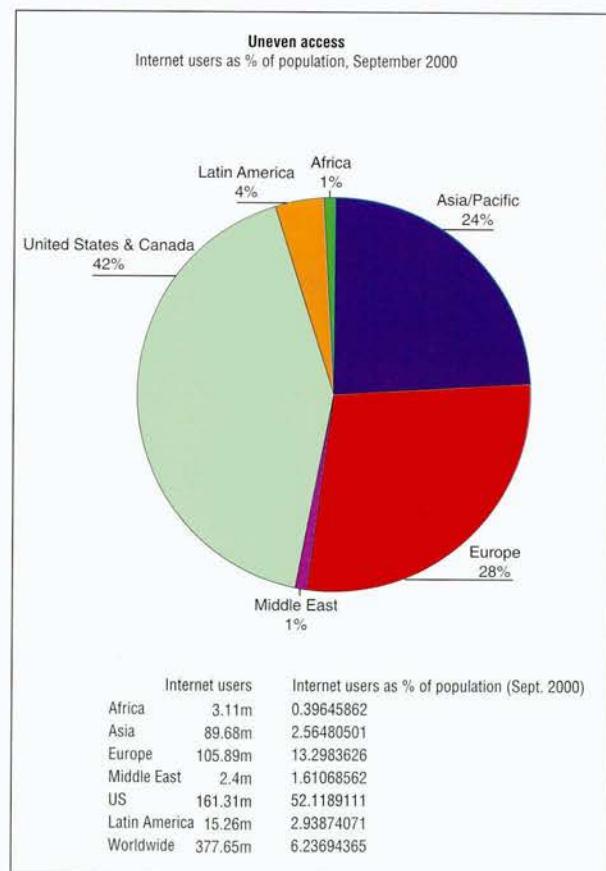
businesses across the whole economy for 1999-2000. And Statistics Canada's data indicate that around 0.2% of the value of customer orders there were received over the Internet in 1999, again across the whole economy.

The US still accounts for more than three-quarters of all e-commerce transactions, although growth has been very strong in Europe, particularly in Sweden and Finland. But despite the promise of "borderless" trade, most e-commerce is still national or within continents. However, cross-border trade is expected to grow, and some say it will grow faster than national e-commerce trade.

This brings us back to the question of what e-commerce actually is and why it is important. To define e-commerce it is essential to identify the transactions on the one hand and the electronic networks being used on the other. Most definitions refer to the sale or purchase of goods or services over the Internet. This is the OECD's preferred narrow definition. However, an

accurate estimate of the value of e-commerce may have to include activities such as gathering information, payment, online delivery, and other processes related to development, production and delivery of goods and services.

The volume of b-to-c e-commerce transactions is generally small. One reason is consumer confidence, since



many users are still hesitant to embrace e-commerce because of worries about delivery problems, reliability, fraud, and so on (see article by Taizo Nakatomi in the Science and Technology section). But perhaps a more important reason is Internet access, which remains uneven. By late 2000, more than half of the population of North America had used the Internet recently, compared to fewer than one in thirty in Latin America, one in forty in Asia, and less than 0.5% of the population in Africa.

It would be wrong to think that all non-OECD countries have low access rates. Take the United Arab Emirates,

only a tenth of those users made an online purchase. Perhaps the most intriguing figure is for Hong Kong, where most online purchases were for food, rather than the usual diet of books, music and software.

So, with all these high values, what should we read into the dot.com craze, or more recently, crunch? The roller-coaster fortunes of Internet-related and e-commerce stocks have been impressive: there has been a 50% drop of the Nasdaq composite index between March and December 2000. Highly publicised failures of many e-retailers such as boo.com and pets.com, and the sharp drop in value of stars like Lastminute.com, have led

developed logistics. Moreover, online sales in areas where "feel" and personal presence are important, like fashion and expensive durable goods, have been slower to develop than many expected. Still, the Internet remains an important complement for offline purchases, often acting as a "shop window" for consumers to browse before purchasing in the traditional way. This appears to be true of cars and home appliances.

Business-to-business models have been much more successful. In fact, they have been part of the development and evolution of established firms in "old" industries. For this reason they are likely to be more durable. The impact

In many ways the new economy is the "old" economy transformed by the application of information and communications technologies. Some of the boldest claims about e-commerce will not materialise.

which according to data from the International Telecommunication Union had relatively more Internet users in 1999 (1,668 per 10,000 inhabitants) than Japan (1,447). Although figures are hard to compare, Dubai's Internet penetration is probably now comparable to that of many OECD countries, but still lower than Singapore's for instance (2,946 per 10,000, according to the ITU).

In the United States, data from the National Retail Federation and Forrester, a market research firm, show that in October 2000 the main consumer items purchased were air tickets, computer hardware, hotel reservations, apparel and consumer electronics. The table below shows how usage varies by country. For example, while nearly half of Australians used the Internet recently,

many experts to revise their perceptions of the likely success of these companies. This is normal in business. And some valuations will no doubt rise again. But in the meantime stock value drops have made it much harder for new and existing firms to raise venture capital. Capital raised in the United States for Internet-related firms dropped to US\$18.3 billion during the third quarter of 2000, down from US\$22.7 billion in the second. Although the fall reflects declines across the whole venture capital sector, Internet firms still account for more than two-thirds of all VC investment.

Essentially the majority of dot.com failures have been in the e-retailing sector (i.e. b-to-c). Here, new business models have proved difficult to develop successfully in the face of established retailers and their highly

of b-to-b has been steadily to improve process efficiency, reduce production costs, accelerate information flows, and streamline supply chains.

In many ways the new economy is the "old" economy transformed by the application of information and communications technologies. Some of the boldest claims about e-commerce will not materialise.

Another successful feature of b-to-b e-commerce has been the rapid growth of electronic marketplaces and exchanges such as Covisint for automobiles, e-Steel, and Chemdex for chemicals. In some sectors, such as utilities, electronics, shipping and office supplies, it is expected that the majority of e-commerce will take place through such marketplaces. Nonetheless, these are costly to set

up and out of the hundreds which now exist, consolidation will be rapid and only a few are likely to survive in each sector.

What rules for a new economy?

Stars will of course emerge from the e-commerce revolution, not just relatively new firms like Yahoo!, but established companies too, like IBM, which has successfully transferred its business processes to the Internet environment. But in many ways the new economy is the "old" economy transformed by the application of information and communications technologies. Although there will be changes in transactions and market structures, some of the boldest claims about e-commerce will not materialise. Perfect competition, the disappearance of many intermediaries, zero transaction costs, a frictionless global

marketplace, etc: all these will probably be elusive. In other words, many of the established rules still apply, although in updated and adapted form.

So where does all this leave e-commerce? More changes are afoot: the further integration of ICT into all business processes within firms and across whole sectors will improve information exchange and increase transparency.

The tools of ICT are developing rapidly. Change is constant in terms of increasing the speed and capabilities of computing, improving the quality of network infrastructures, and lowering the cost of access. The more people that use the Internet the more valuable it will become for all: this is what economists call network effects. New access devices have great

potential in areas such as third generation mobile commerce (see article by Joanne Taaffe), digital TV ("t-commerce") and wireless communications. New business models will be able to build on these. So, while few of the early dot.com entrants will survive after this year's shakeout, those that do can look forward to taking part in an energetic business scene.

Governments have an important role to play too, by encouraging competition in infrastructure markets; assuring consumers and businesses that those networks are secure, reliable and verifiable; and ensuring that legal and commercial frameworks for online operations are transparent and predictable. These are important (and by no means easy) challenges. But addressing them will pay dividends for consumers and producers alike. And that means governments too. ■

References

- ◆ "Business-to-Consumer E-Commerce Statistics" (DSTI/CP(2000)10), OECD 2000.
- ◆ "Defining and Measuring Electronic Commerce: A Provisional Framework and a Follow-up Strategy", (DSTI/ICCP/IE/IIS(2000)3/REV1), OECD 2000.
- ◆ E-commerce Business Impacts Project (EBIP), (DSTI/ICCP/IE(2000)5/REV2) OECD 2000.
- ◆ E-commerce Consumer Guidelines: <http://www.oecd.org/dsti/sti/it/consumer/prod/guidelines.htm>
- ◆ For e-marketplaces, visit: <http://www.commerceone.com/customers/emarktplaces.html>
- ◆ Global Electronic Commerce: A Policy Primer, by Catherine L. Mann, Institute for International Economics, Washington D.C., July 2000.
- ◆ Information Technology Outlook 2000, Paris 2000
- ◆ OECD's e-com portal site is at http://www.oecd.org/subject/e_commerce/

Buying habits

Online shoppers in selected countries, July 2000

	Internet users % ¹	% of Internet users shopping online ²	Main category (% share)
United States	58	27	Clothes (22%)
Norway	56	19	Music (21%) Books (21%)
Netherlands	46	12	Music (40%)
Australia	45	10	Books (21%)
Korea	34	16	PC hardware (20%)
Japan	33	20	Books (18%)
Belgium	28	11	Books (53%)
Germany	28	17	Books (62%)
United Kingdom	27	18	Books (38%)
France	26	7	Leisure travel (44%)
Spain	18	7	PC software
Hong Kong, China	42	7	Groceries (32%)

1. Percentage of the population having used the Internet in the previous month
 2. Percentage of Internet users having made at least one online purchase in the previous month

Source: Taylor Nelson Sofres, July 2000

Favourable economic outlook

Global economic growth appears to have peaked during the first half of 2000, but world economic prospects remain relatively bright, despite a weakening in many equity markets. After reaching 4.25% this year – the fastest pace in more than a decade – OECD-wide output growth is projected to slow to about 3.25% in 2001 and 3% in 2002. Core inflation is likely to remain low in most OECD countries, against a background of modest tightening in monetary policy in the United States and in the euro area. OECD unemployment may remain close to its present level, at about 6% of the labour force. After a sharp rebound in activity outside the OECD area, world output may rise by some 4.75% this year, before slowing in 2002.

This broadly favourable outlook assumes that world oil prices will ease back from their recent high levels. The low stock situation, and the prospect of continuing political tensions in the Middle East, point to an unusually volatile market. This is not a crisis of the same dimension as the oil shocks in the 1970s, but the situation may change if oil prices continue to rise.

The optimism over technology stocks at the beginning of the year has waned and risk premia in high-yield corporate bond markets have widened. If these developments were to intensify or spread, it would undermine confidence and discourage private spending, especially in the United States.

Attractive rates of return and buoyant economic conditions in the United States have ensured that the record high current account deficit could be financed without difficulty. Ultimately, however, the current account deficit will require adjustment. A sudden reversal could have inflationary

consequences, leading to a more abrupt slowing in the US economy.

A continuing fall in equity prices, higher oil prices and the projected slowdown in the OECD area could inhibit growth in a number of non-OECD emerging economies. This risk would increase if interest rates rose significantly in OECD countries.

Monetary policy in the United States will depend on how rapidly pressure on capacity eases. The slowdown underway in the US economy should help reduce excess demand and inflationary risks. A further modest increase in the federal funds rate may be necessary in 2001 to check inflationary pressures but there should be scope for the Federal Reserve to start reducing interest rates during the course of that year.

As regards fiscal policy, the structural budget surplus is officially projected to continue to rise steadily. For 2002 and beyond, however, be prepared for a policy agenda that appears likely to involve tax cuts and spending increases.

In the euro area, the challenge for policy is to avoid inflationary bottlenecks and prolong the expansion. The rise in oil prices and less supportive monetary conditions have already contributed to a moderate deceleration. Core inflation is projected to move up as spare capacity is exhausted. Provided the euro does not rise significantly, the ECB may have to raise interest rates by about 50 basis points to keep core inflation in check.

The Japanese economy has started a moderate recovery. Output is projected to grow at a rate of 2 to 2.25% and deflation should subside. Employment may increase modestly, though unemployment is likely to remain high. A re-balancing of policy is needed, with monetary policy continuing to support growth and fiscal consolidation

starting gradually during 2002. Priority will be given to improving the efficiency of the public expenditure system, while continuing to restructure and liberalise the economy.

Sustained strong growth in the United States and a few other OECD economies has prompted much talk of a “new economy”, with arguments emphasising the role of information and communications technology. The evidence suggests that “old economy” mechanisms are still crucial to understanding the growth process. In particular, the accumulation of various kinds of capital – especially human -- as well as research and development are important for growth, and differences here help explain the variations in growth patterns across countries. ■

Seasonally adjusted at annual rates			
	2000	2001	2002
Real GDP % change			
United States	5.2	3.5	3.3
Japan	1.9	2.3	2.0
Euro area	3.5	3.1	2.8
Total OECD	4.3	3.3	3.1
Inflation ^a %			
United States	2.1	2.2	2.3
Japan	-1.5	-0.4	-0.2
Euro area	1.2	1.9	2.0
Total OECD	2.6	2.4	2.3
Unemployment % of labour force			
United States	4.0	4.2	4.5
Japan	4.7	4.6	4.6
Euro area	9.0	8.3	7.7
Total OECD	6.2	6.0	5.9
Current account balances: % of GDP			
United States	-4.3	-4.5	-4.3
Japan	2.8	2.7	3.0
Euro area	0.0	0.1	0.4
Total OECD	-1.2	-1.3	-1.2
Short-term interest rates ^b %			
United States	6.5	7.0	7.0
Japan	0.2	0.6	0.9
Euro area	4.4	5.4	5.5
World trade % change	13.3	9.7	8.0

Cut-off date: 7 November 2000

^a GDP deflator, % changes

^b United States: 3-month eurodollar; Japan: 3-month CDs; euro area: 3-month interbank rates

Source: OECD

New wine and old bottles

DOUGLAS C. WORTH, SECRETARY GENERAL, BUSINESS AND INDUSTRY ADVISORY COMMITTEE TO THE OECD (BIAC)

To understand the changes being driven by the new economy, policymakers will need to look at the big picture.

The term "new economy" has captured the attention of everyone who makes or thinks about public policy, in a way no other metaphor has done in recent years. Certainly, it brings many

From innovation to growth

The rate and remarkable persistence of downward price movement in ICT (information and communications technology) industries was one of the key factors which prepared the

While the widening availability of ICT equipment itself is merely a precursor of the new economy, an even more powerful factor is the tremendous increase in the quality and range of business opportunities enabled as a result.

oversimplifications, but it is a useful catchword: it helps us focus on the expanding frontier of economic possibilities. However, the real meaning of the term 'new economy' is broader than Internet technology itself; it has a scope that reaches everywhere in the "old economy" where new technology is applied.

Our initial reflections in BIAC, largely drawing upon the output of OECD's studies, indicate that some of the most challenging issues in policymaking are arising from the interaction between the 'new wine' of new technology and the contents of the 'old bottles' into which it is being poured.

Issues include the institutional framework for markets in labour, capital, goods and services; the quality of regulation; and the style of governance, to name but a few.

way for powerful Internet technologies, enabling, in turn, significant efficiency gains. It is not possible to overemphasise the fact that this was achieved in an industry characterised by fierce competition and internationalisation of production, where attempts to pick winners have been distinctly unsuccessful.

The 'new economy' debate has so far been conducted almost exclusively within a closed economy logic, as if the growth and transformation of a modern economy can be considered in isolation from its cross-border interaction with others.

While the widening availability of ICT equipment itself is merely a precursor of the new economy, an even more powerful factor is the tremendous increase in the quality and range of business opportunities enabled as a result. To be able to grow, the markets for new goods, services or ways of doing business have to be open to competition, which would benefit from greater international compatibility in policymaking.

During the past year, OECD has carried out a number of studies, under the heading of the Growth Study, which go a remarkable way towards clarifying analytical issues and data on the relationship of ICT-led innovation to growth in productivity. But, inevitably, the available information is heavily focused on the experience of the United States, an economy where highly flexible labour markets and a regulatory framework strongly conducive to business creation can be taken for granted, relatively speaking.

But one of the aims underpinning the 'new economy' debate is to elucidate what needs to be done to enable other countries to benefit from technological innovation to a similar extent. If so, there is a need to build the policy recommendations emanating from this project on a number of policy pillars: innovation

It is hard to imagine how heavy investment in ICT and skills can lead to a widespread increase in productivity growth, in an economy where the dismantling of redundant economic activities is routinely subject to negotiation with interests vested in their protection.

policies; labour and capital market policies and conditions; and the policies aimed at improving the quality of the regulatory framework – plus their interaction.

A rapid glance at the results of OECD's past studies lends considerable support to the hypothesis that it is indeed the juxtaposition of good indicators on ICT-readiness, labour market adaptability and regulatory framework, that tends to be associated with either good or improving performance in the growth of productivity and output, and, especially, of both.

Indeed, it is hard to imagine how heavy investment in ICT and skills can lead to a widespread increase in productivity growth, in an economy where the dismantling of redundant economic activities is routinely subject to negotiation with interests vested in their protection. OECD should be careful to convey this message clearly and not inflate false expectations.

An area which is in urgent need of policy attention is the quality, coverage and international comparability of data on the inputs and outputs of new technologies and new business models, especially in the services sector.

Last but not least, innovation in new technologies from life sciences is likely to offer new opportunities

for productivity and output growth in the rest of the economy, and solutions to some of the seemingly intractable social policy challenges facing the OECD economies.

The simple logic stream – innovation raises productivity which raises living standards – should be the starting point for all policy deliberations.

From international trade to innovation

The key motivation behind the OECD Growth Study is to determine and purvey a policy formula that can enable a sustainable increase in the rate of productivity growth (as a result, non-inflationary output growth) which is broadly based in the economy (i.e., can show up in macro-economic statistics). But the 'new economy' debate has so far been conducted almost exclusively within a closed economy logic, as if the growth and transformation of a modern economy can be considered in isolation from its cross-border interaction with others.

On the business side, there are ICT-based opportunities to insert competing business models in the existing market structure. Regulatory reform in favour of increased competition in markets therefore is a *sine qua non* of developing e-business and transforming the old into the new economy.

The point is that, while all the myriad of micro-economic and social policies routinely highlighted to develop human and physical capital and underpin the markets are all eminently relevant, their real impact will be limited as long as firms are not forced to innovate in highly competitive markets.

Widening the reach of international trade and investment among economies is the most effective, if not the only practical way of opening sectors to competition, and spreading this innovation-led economic evolution.

With manufacturing already subject to significant trade liberalisation, from the point of view of the OECD economies, a strong push towards liberalisation of telecommunications and trade in other services is an essential element of their policies to enhance innovation, market development and growth.

Global commitment to these aspirations is best effected by a re-commitment to the market-based economy, to the world trading system – with its roster of previous agreements and ongoing negotiations – and to the commencement of a new Trade Round. ■

E-commerce and taxation: a virtual reality

Taxing e-commerce is a global challenge for governments and business alike. It is also not without its controversies. We asked Simon Woodside of OECD's Fiscal Affairs division to explain.

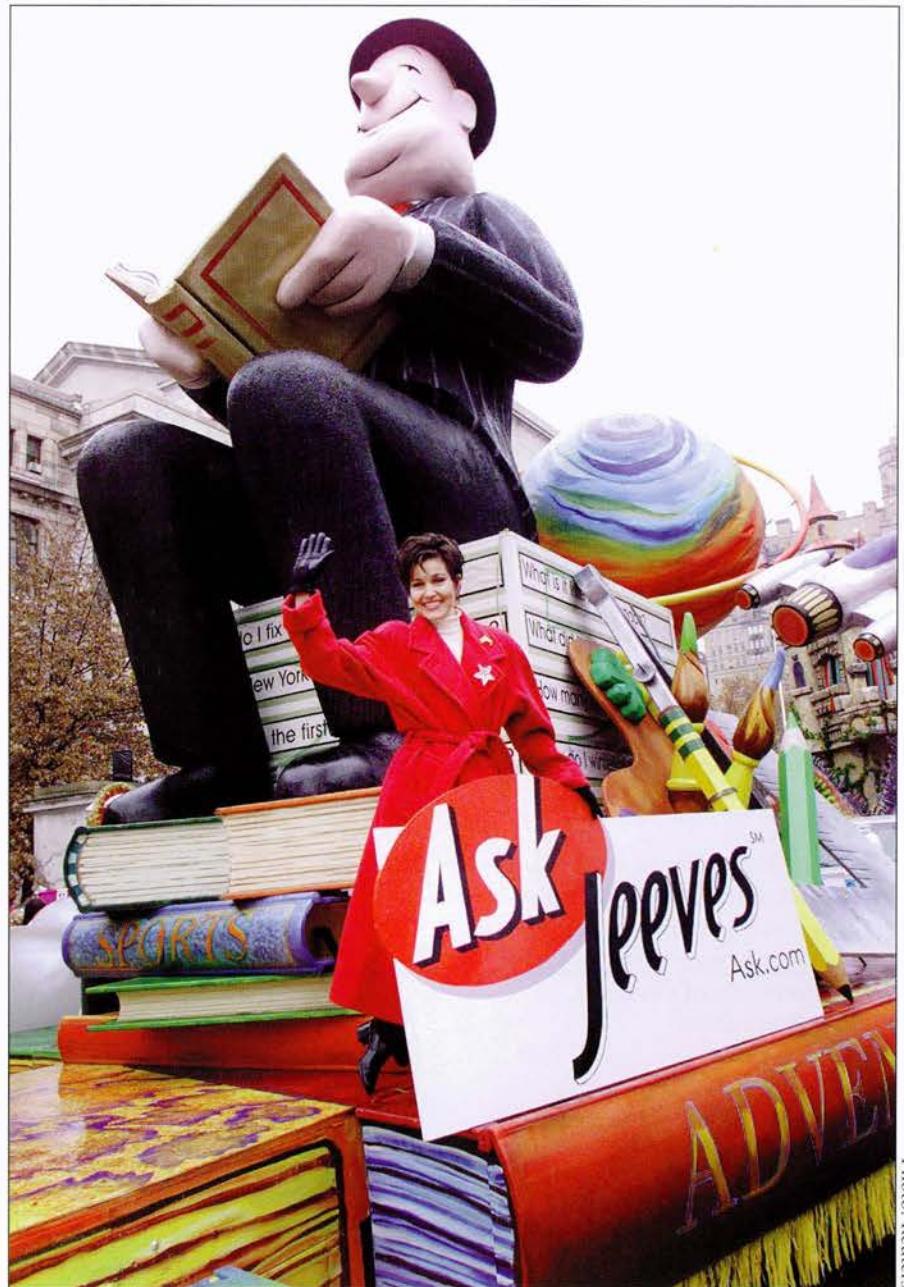
Observer: Why is taxing e-commerce such a controversial issue?

Simon Woodside: Everyone likes to argue about tax. And the tax treatment of e-commerce is no exception. Some of the controversy stems from such notions as the idea that e-commerce is somehow so special that governments shouldn't tax it at all. That's not an argument that I buy – there's no rational case for granting e-commerce more favourable tax treatment than

E-commerce makes international trade in particular so much easier, and so the debate about taxation moves up the international level, too.

conventional trade. That would only distort the market and if, as expected, e-commerce continues to grow, it could lead to an expanding hole in the revenue base.

E-commerce gets more of the headlines, probably because it's recognised as such an important new feature of the global economy. It does beg fundamental questions about the way our taxation systems work – whether it's taxation of company profits or taxation of private consumption. The technology that makes e-commerce



"Jeeves, what's the tax bill on this lot?"

Photo: Reuters

what it is puts more of a spotlight on the possible challenges to effective taxation – just how do you tax a cyber-business, or all those sales over the Net? E-commerce makes international trade in particular so much easier, and so the debate about taxation moves up the international level, too. That's where the OECD fits in.

We have to provide the same level of certainty to governments and business that we aim for today in relation to conventional commerce.

Most mainstream opinion accepts that e-commerce should properly fall in the taxation net. What we need to consider is how that works internationally, to provide the same level of certainty to governments and businesses that we aim for today in relation to conventional commerce. We need to be clear about where taxation takes place, and how – especially to avoid the risks of double taxation, or unintentional non-taxation.

Observer: What are the problems of taxing e-commerce?

SW: The priority has to be to identify practical and reasonable ways of applying internationally accepted taxation norms to e-commerce; and, where necessary, of clarifying or developing those norms. So, for example, for direct

tax purposes, we're clarifying how such concepts as 'permanent establishment' – that's the rule which determines the right of a state to tax the profits of an enterprise of another state – should operate in the electronic world. Elsewhere, for indirect taxes (such as value-added tax, or VAT) we're confirming how international transactions should be

treated, and tackling such tricky issues as how you collect the tax on a product that is delivered online.

So, yes, there are a good few technical issues that need to be examined in detail. And that's precisely what the OECD process is all about – bringing together, through our Technical Advisory Groups, experts from business and government. And those government representatives are not only from OECD member economies, but from many other economies too – Singapore, Brazil, South Africa, China, India to name

just a few. And, of course, we are looking for additional input from participants at the Dubai 2001 conference.

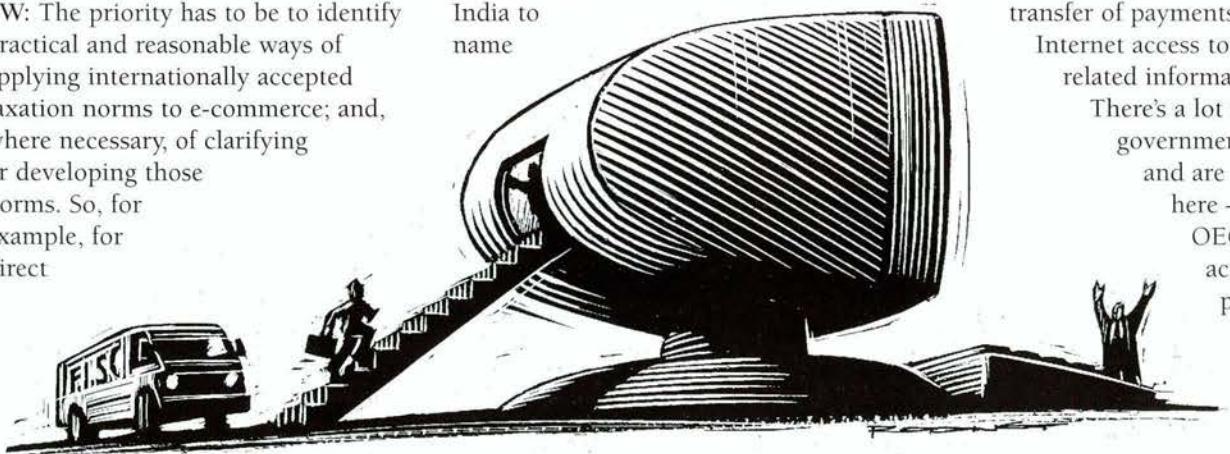
The key thing is to maintain and strengthen the international dialogue. On the whole, there aren't any fundamental differences of opinion, although there are some differences of emphasis. It's important that we recognise these.

Observer: Is it purely a trans-border issue, or are there domestic complications too?

SW: Not entirely – although the focus of the OECD's work has been on the international aspects of taxation. That's where we have the strongest role to play. That's why, too, we're so committed to a dialogue that actively involves economies across the globe.

At the domestic level, one of the most important issues is how governments can seize the opportunities presented by e-commerce technologies to improve taxpayer service, whether it's electronic filing, electronic transfer of payments, or just Internet access to tax-related information.

There's a lot that governments can do and are doing here – and the OECD is actively promoting these efforts.



Observer: Why is there so much fuss right now about how VAT systems should apply to e-commerce?

SW: Most of the fuss is actually about a relatively small part of the overall picture – namely b-to-c (business-to-consumer) cross-border deliveries online from, say, a US supplier to private consumers in Germany. The vast majority of e-commerce is b-to-b (business to business) – whether it's domestic or international – and there are existing VAT principles and collection systems that can be readily applied here. So the focus is then on B2C

as part of the online transaction. There's a lot more work needed on the detail of such systems. In the interim, states are probably going to have to consider implementing a simplified registration system for such non-resident suppliers.

Observer: Where do countries stand on e-commerce taxation?

SW: OECD and many non-OECD countries, as well as the business community, are firmly committed to the basic principles as set out in the Taxation Framework Conditions (endorsed at the Ottawa Ministerial

comprehensive reports on these and other topics, and so starting to draw firm conclusions from the work of the past couple of years.

Observer: Finally, some people argue that e-tax is unworkable and go to the extreme of saying it will spell an end to government. What do you think of these views?

SW: I think they're misguided. E-commerce can and will be taxed – the important thing is that it be taxed fairly and efficiently (just like conventional commerce). There's no question of governments suddenly

Taxation still plays a central role in how we pay for services. It's not the "end of government" we should be talking about, but the emergence of "e-government".

transactions. Here too, in many instances, existing tax collection mechanisms can work – especially when the transaction involves goods, or is a domestic one.

It's the international online deliveries that present the greatest challenge, especially when the supplier has no presence at all in the jurisdiction of the customer. Self-assessment by individuals is never a great way to secure this sort of tax – but looking to the supplier to collect the tax, as is the norm for VAT-type taxes, is not so easy either because the supplier is in another state. There are no simple answers right now – governments and businesses are agreed on that. We're agreed too that the best way forward is to look towards technology-based systems – for example, ones where the tax calculation and remittal is undertaken by a trusted third party

Conference in October 1998). Those conditions are the foundation for all our current work – all the participants in the debate, government and business, recognise them as such.

Observer: What are those basic principles?

SW: In short, non-discriminatory treatment of e-commerce; the application of existing rules and concepts; the importance of a fair sharing of the tax base internationally; and a commitment to pursuing these ends through intensified dialogue with business and non-OECD members. Since Ottawa we've achieved a broad level of consensus on such issues as the interpretation of the existing permanent establishment rules, the characterisation of business income for tax purposes, and the way forward on VAT. In early 2001 we'll be issuing

allowing their tax revenues to evaporate. Talk of the "end of government" is wishful thinking on the part of a maverick (and slightly naive) fringe. The truth is, governments are duty-bound to provide their citizens with core services (schools, hospitals, transport infrastructure, social security provisions, etc.). Private provision may be possible in some cases, but in practice taxation still plays a central role in securing the funds to pay for those services. So taxation of e-commerce is a normal part of the accepted pattern of how our countries operate. What tax administrations have to do is exploit the technology available to improve taxpayer service and at a lower cost. It's not the "end of government" we should be talking about, but the emergence and development of "e-government". ■

Reference

- ◆ Visit www.oecd.org/daf/fa/



Home

• Periodicals

• Statistics

Country	1980	1985	1990
Australia	18,811.73	43,279.72	144,008.30
Canada	165,007.82	260,000.00	4,754,200
Spain	1,000,000	1,000,000	1,000,000
France	164,570.02	170,170.00	1,700,000
Germany			
Ireland			
United States			

Access

full-text OECD publications and databases
on-line 24 hours a day, 7 days a week.

Download

OECD forecasts, country studies,
reports, and statistical databases.

Build

your own tables on-line
from the latest available OECD data.

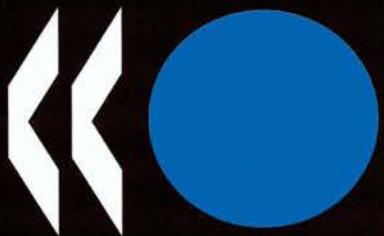
Save

OECD data in Excel™ or .csv formats.

ASK FOR A FREE TRIAL

SourceOECD

www.sourceoecd.org



Building digital bridges: the Global Business Dialogue on Electronic Commerce

Bobby Romulo, Chairman of The Equitable Card Corporation and Chairman of the GBDe's Digital Bridges Task Force; and Cobus Stofberg, CEO of MIH, and GBDe regional co-Chair for Europe/Africa

Reading about the digital divide in early 2001 may give a strong impression of "déjà vu". Yet there remain some daunting facts and figures: currently, 80% of the world's population has never even heard a telephone dial tone; only 2% of the world's population is connected to the Internet. Even more incredible, two billion of the earth's inhabitants subsist on the equivalent of \$2 or less a day.

In relative terms, we have only moved a few steps beyond the starting line of the information and communications technology revolution, a revolution which has already created untold wealth in the United States and Europe. But the benefits from this technological horn of plenty remain largely untapped by the developing nations of Asia, Africa, and Latin America.

Online use estimates show that out of a world total of online population of 377.65 million, 161.31 million are in North America, 105.89 million in Europe, 89.68 million in Asia/Pacific, 15.26 million in Latin America, 3.11 million in Africa and 2.40 million in the Middle East.

During the year 2000, the leaders of the G8 nations decided to take bold

steps to bridge the so-called "digital divide" and to ensure that the world's poorest countries share in

Industry leaders in e-commerce, working in concert with governments, are best positioned to make the promise of Internet "connectivity" a global reality.

the benefits of free and unfettered global electronic commerce. The world's media paid scant attention to the e-commerce aspects of the G8 Summit in Okinawa in July 2000, but this Summit produced far-reaching, even visionary policies to help broaden the use of Internet and e-commerce.

One major item was the free flow of goods and ideas through cyberspace – an imperative. To accomplish this, the private and public sectors must agree on responsible and reasonable rules for the Internet. Underdeveloped areas of the world require that swift and low cost Internet access be made available to them for education, healthcare information and medical services, to buy local products; and to get ideas and assistance for local business initiatives.

To bridge this significant technology divide, the world's business leaders in the e-commerce sector have made a tangible commitment. They have come together to form the Global Business Dialogue on Electronic Commerce (GBDe), a CEO and Board Member-led initiative of more than 72 companies from countries as diverse as South Africa, Venezuela and the Philippines, together with the United States, the European Union and Japan.

GBDe's objective is to work in co-operation with businesses, governments, non-governmental organisations (NGOs), private foundations, consumer organisations, and multilateral institutions to broaden the involvement of key stakeholders in creating an environment that ensures that e-commerce can reach its full economic potential.

GBDe has been working for two years to establish genuine dialogue and co-operation between governments and the private sector as each one works on policies to best protect and expand use of the Internet. Industry leaders in e-commerce, working in concert with governments, are best positioned to make the promise of

Internet "connectivity" a global reality. Our central belief is that e-commerce can offer great opportunity, becoming the basis for "leapfrog" developments for entrepreneurs, consumers and indeed government institutions in emerging economies.

During 2000 we created a task force, the Digital Bridges Working

foundations, and multilateral institutions – must work together to bridge the digital divide.

In 2000, the GBDe Working Group submitted several papers to the G8 member countries during the Summit preparation phase, presenting a list of projects already undertaken by GBDe members which address digital divide issues. We are pleased that the GBDe

updated information on such projects around the world.

We are also working with the eASEAN Task Force, created by the Association of South East Asian Nations to create a policy framework for the launch and growth of e-commerce, and with business government leaders in the APEC region. The GBDe has signed

During 2000 we created a task force, the Digital Bridges Working Group, to make recommendations for addressing the chasm between those who are reaping the benefits of new technology and those left behind.

Group, to make recommendations for addressing the chasm between those who are reaping the benefits of new technology and those left behind. This Group focuses on the role that business can play to help bridge the gap. It advocates a market-led economic climate which governments, particularly those with emerging economies, should find advantageous to their countries' development.

The Okinawa G8 Summit articulated a plan of action to accomplish this by establishing a Digital Opportunity Task Force (DOT Force) to address education, promote sound government policy, and encourage public-private partnerships. The G8 leaders embraced global and market-driven solutions to e-commerce issues, renewing their commitment to work with all governments to develop policies, and regulatory and legal frameworks, to ensure the free flow of commerce through cyberspace. The G8 recognised that the collaboration of all stakeholders – governments, businesses, the NGOs,

was called upon by the G8 to join the DOT Force. This year, we intend to continue our contributions to the DOT Force, in co-operation with other leading global private sector organisations.

In July 2001, the DOT Force reports back to the G8 members at their summit in Genoa. As part of our contribution to summit preparations, the GBDe will present an updated compendium of existing digital bridge projects from GBDe members, along with guidance on best practice at implementation stage. Although this calls for considerable work on our part, we know it is an investment that, proportionately speaking, will cost us little when we consider the unlimited dividends likely to flow from it. We are also linking our current compendium to similar lists of digital divide projects undertaken by G8 members, other states and other stakeholders. This will provide a resource that will allow government officials, non-profit groups, academics, and others to obtain

statements of co-operation with both the eASEAN Task Force and with APEC-ABAC so that we share our expertise and experience on e-commerce policy and pilot projects.

GBDe's Digital Bridges initiative promises to help governments address the critical challenges presented by the global digital divide. By assisting developing nations to cross these bridges, we can help to create a new world – more peaceful, prosperous, and connected – in which the dogs of war are less likely to be unleashed, and illness and poverty can be vastly reduced.

Our message is clear. It is imperative swiftly to span the digital divide with Internet connectivity, e-commerce, e-education, and e-partnerships. Building digital bridges will encourage investment in Internet infrastructure, and directly and indirectly create new and better jobs for millions of people. ■

Reference

◆ <http://www.gbd.org/>

Credit where credit is due

JOANNE TAAFFE, COMMUNICATIONS WEEK INTERNATIONAL

E-commerce has only just begun and already everyone is talking about m-commerce. What is it exactly? And who can benefit?



Windows shopping

The South African Department of Communications would like to see Johannesburg's street-traders armed with a new weapon against theft: the mobile phone. Under a pilot scheme, tourists will be able to pay street-sellers for

traditional African artifacts via a mobile handset. Either the trader will slot a customer's smart credit card into a mobile phone-cum-smart-card reader, or the tourist will perform a money transfer to the trader's bank account.

Doing away with the need to carry wads of cash in a city rife with crime is just one of the more practical sides of mobile commerce. Just like e-commerce, m-commerce is the buying and selling of goods across public telecommunications networks.

Photo: Reuters

Indeed m-commerce is likely to complement, rather than replace, e-commerce systems already in place. Businesses, for example, may provide secure mobile links to existing e-commerce sites.

There are, however, some key differences. Whereas e-commerce bridges distance and enables companies to display and sell wares cheaply to consumers and other businesses round the world, one of the selling points of m-commerce will be proximity.

Whereas e-commerce bridges distance and enables companies to display and sell wares cheaply to consumers and other businesses round the world, one of the selling points of m-commerce will be proximity.

The mobile industry is setting much store by location-based services, such as finding a restaurant, buying electronic train tickets and advertising shops as subscribers approach them.

Constant companion

Mobile phones travel most places with the subscriber and, thanks to the SIM card, they can easily become electronic wallets. The SIM card, or microchip, in the back of every phone serves to identify the operator, the location of the phone and often the subscriber.

By the end of 2010, "m-commerce will be the second biggest industry behind healthcare," claims Risto Perttunen, head of McKinsey's global wireless group in Helsinki. The remark underlines the enormous impact analysts expect m-commerce to have on consumer and business purchasing.

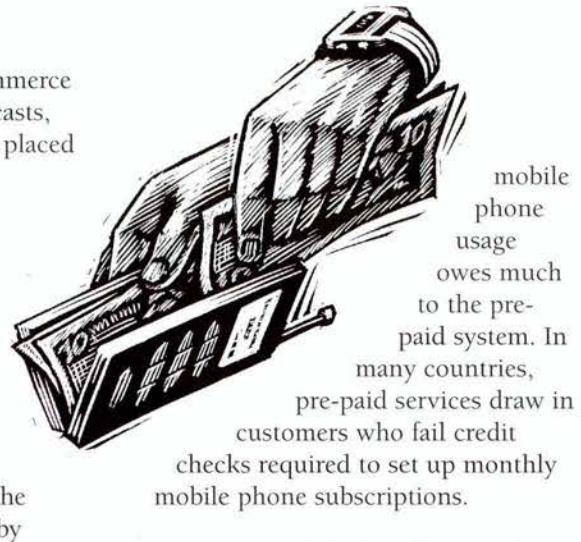
Even if the growth of m-commerce does not meet analysts' forecasts, m-commerce is much better placed to impregnate the average consumer's daily life than e-commerce.

Mobile phones are cheaper, easier to use and more prevalent than PCs. The Gartner Group, an IT and telecom research company, forecasts that mobile phone calls will account for 40% of the links to e-commerce systems by

2003 and estimates that mobile phone users already outnumber fixed Internet users by more than two to one.

In addition, for developing countries, building mobile networks is the cheapest and fastest way to provide people with a phone line. Also, mobile phones come with built-in payment systems, so there is no need for bank accounts to set up direct debits. Indeed pre-paid SIM cards already act as electronic purses, albeit with micro-purchases limited to minutes of telephone conversation.

It is therefore not much of a stretch to employ a pre-paid card as a debit card for small purchases. A phone turned debit card might be particularly useful in those countries where credit card uptake is comparatively low, but pre-paid mobile phone usage is high. This is the case not just for developing countries; Italy's high growth in



mobile phone usage owes much to the pre-paid system. In many countries, pre-paid services draw in customers who fail credit checks required to set up monthly mobile phone subscriptions.

Operators could also offer a credit system by adding online purchases to their customers' monthly bills. Since the SIM card can identify the customer, it provides a degree of security which is not available for consumers performing e-commerce over a PC.

It comes as little surprise that mobile operators around Europe are greeting m-commerce enthusiastically.

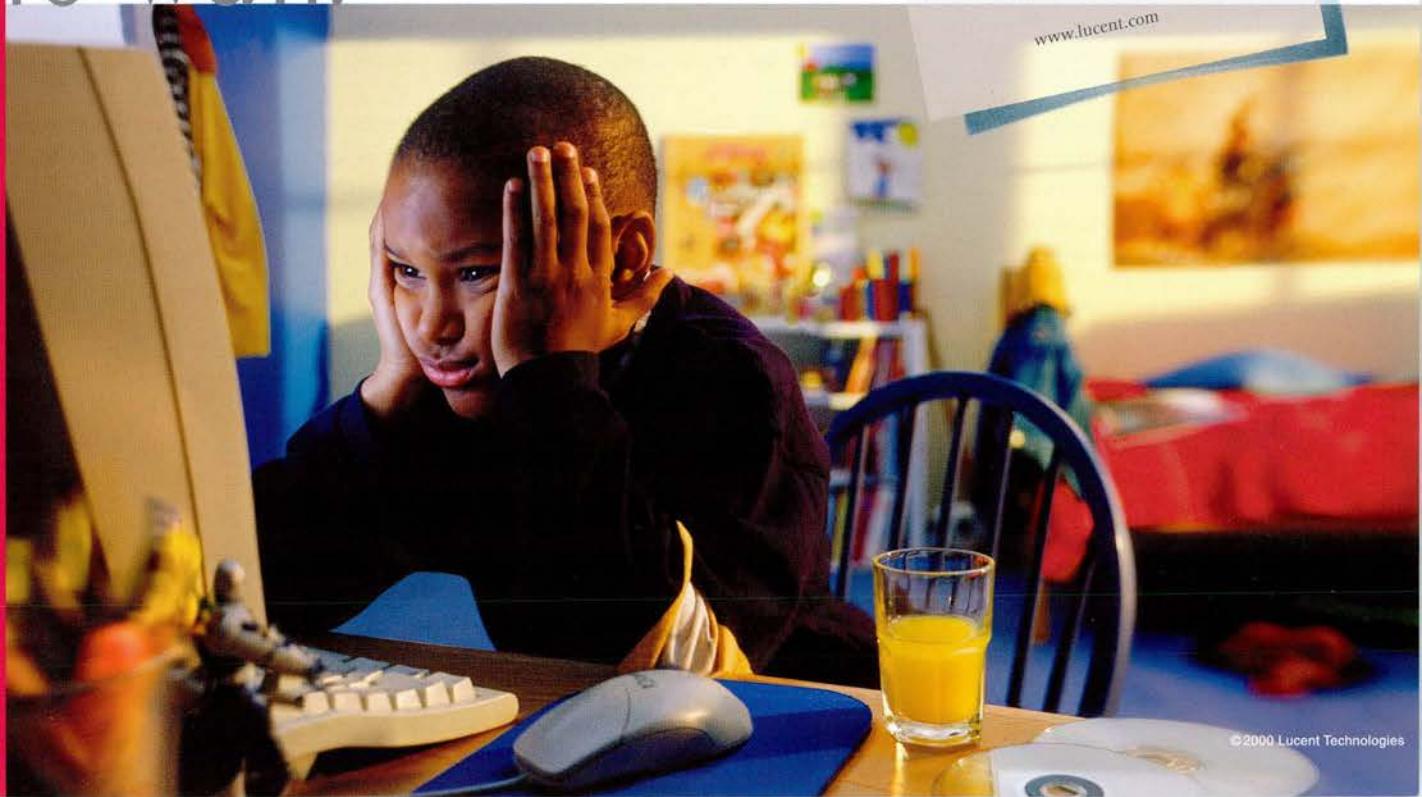
Half-man, half-phone?

As Telecom Italia Mobile (TIM) points out, a SIM card is fast becoming capable of storing not only phone credits or subscriber identity information, but also serving as a credit and debit card, a driving licence and a health card, all rolled into one.

The average mobile phone customer may feel queasy about storing so much data on a microchip controlled by a mobile operator, especially as dot.coms have already come under fire for gathering customer information to sell.

Yet TIM is one of many operators hoping to offset falling voice call

The average
Internet download
takes 22 seconds.
That's 22 seconds
longer than a
10-year-old wants
to wait.



Today's kids are born believing that fast enough isn't fast enough. The **Optical Internet** we're helping to create offers unlimited bandwidth. So kids can send friends streaming video of their birthday party. Or download pictures from their cousins in nanoseconds. And actually have time left to e-mail their grandparents. Change the way kids communicate, and you change the way they live. Lucent Technologies. We make the things that make communications work.™

Expect great things.™

Lucent Technologies
Bell Labs Innovations

www.lucent.com



revenues, with revenues from m-commerce. The Italian operator expects 15% of its revenues to come from mobile commerce between 2002-2004, compared to 5% between 2000 and 2001.

So far TIM has introduced a commerce application for buying and selling securities in Milan, New York, Paris and Frankfurt and hopes to see its customers using mobile phones to pay utility bills and transfer money.

M-commerce still resembles a glitzy-yet-deserted shopping mall linked to the rest of the world by a high-toll dirt road.

Other early mobile commerce applications under development around Europe include micro-payments for cinema tickets and newspapers, as well as online gambling.

M-commerce service providers hope to convince customers used to receiving free content over the fixed Internet to pay for information specific to their location.

Immobile

Despite the promise, for most European and US consumers, m-commerce still resembles a glitzy-yet-deserted shopping mall linked to the rest of the world by a high-toll dirt road.

Few mobile operators outside Japan have yet built the packet-switched data networks necessary to provide high-speed access to the goods and content people might want to buy. Currently most European GSM customers are stuck with a maximum data speed of 9.6Kbps, about a third to a fifth the speed of standard phone

line transmission, and per minute telephone charges that compare ill with prices paid to access the fixed Internet.

Only next year will the first data networks capable of providing high-speed data services that are billed on a flat rate basis, or according to volume or service, become available.

There are other obstacles to m-commerce. For instance, just as in

the fixed world, people are concerned about security of transactions. In addition, few subscribers have handsets or personal digital assistants (PDAs, hand-sized agenda-cum-notebooks capable of displaying e-mail) with keypads and screens suitable for extensive online shopping.

On the supply end, the poor take-up of limited WAP services has helped dampen the development of applications and services for mobile devices. Wireless application protocol services have been marketed as a way of accessing the mobile Internet, for browsing and downloading information, for example. But few mobile Internet sites in Europe and the United States have succeeded in tempting customers to part with their cash and certainly offer nothing that approaches the richness of the fixed Internet.

Even NTT DoCoMo's iMode service in Japan, which is presented as the bellwether for the future of mobile

and data services in Europe, earns little from m-commerce. Revenue from m-commerce in September 2000 represented less than 1% of NTT's overall Internet commerce business, according to Kunihiko Adachi, President of the Tokai regional branch of NTT DoCoMo. Analysts note that much m-commerce in Japan is accounted for by a craze for downloading new ringing tones for customers' mobile phones.

But high-speed services are not far away and once the necessary infrastructure and services for m-commerce are in place, the effects will be felt not only in the mobile industry, but also in banks and credit card companies. Operators are well placed to offer attractive and easy-to-use debit and credit schemes, which could persuade their large subscriber bases to circumvent banks for certain transactions.

Or mobile service providers could undermine the bank's brand and relationship with the customer by absorbing banking and credit card details in the SIM card.

Banks are fighting back individually by investing millions of dollars in m-banking, and striking partnerships with mobile operators, some of whom are wondering if they should become banks.

Visa is developing with Nokia a mobile phone that has room for two microchips: the SIM plus a chip, issued by the user's bank, for making authenticated Visa credit or debit payments.

There is a good chance banks and operators will find their respective

niches, with operators focusing on debit payments, rather than getting involved with the tricky business of credit risk management.

For developing countries m-technology offers some measure of hope. In countries where credit and banking services are not available to most of the population, m-commerce payment schemes could fill the void. Already there are signs of a huge take-up of pre-paid mobile services in developing countries. And, according to Hamadoun Touré of the International Telecommunication Union, a successful scheme in Venezuela has enabled customers to add purchases to their monthly phone bill. Moreover, in Cambodia pre-paid subscriptions greatly outnumber monthly mobile accounts

and are often the only way for those who cannot get a credit rating to acquire a phone service.

Unfortunately, while mobile phone take-up is sharp, more is needed if m-banking and m-commerce are to take hold in poorer countries. Commerce depends not only on the

In countries where credit and banking services are not available to most of the population, m-commerce payment schemes could fill the void.

ability of buyers and sellers to connect; it also requires mechanisms of trust that guarantee payment and delivery of goods.

E-commerce, for example, has largely been the digitisation of trust relationships that already existed. Since people, particularly in rural areas of developing countries, do not have credit cards or bank accounts, trust processes like authentication and non-repudiation are generally not in place, Mr. Touré notes.

Mobile operators may be unwilling to offer sophisticated payment facilities in such an environment. As a result, mobile commerce is unlikely to feature in a big way in these countries, says Neil Montefiore, CEO of Mobile One, a mobile operator in Singapore.

The message is that until sound regulatory environments governing finance and telecoms are in place, m-commerce's benefits will remain the privilege of the developed world. ■

References

- ◆ Dunn, David E., "The Knowledge Divide, Where Some Angels Dare," *OECD Observer* no. 223, May 2000.
- ◆ Birch, David, Consult Hyperion, "Mobile Banking: Will Mobile Telecommunications Operators Offer Bank Functions?", July 2000 (web site: www.efinancemagazine.com/magazine.htm).



Handy entertainment

Photo: Reuters

Interview with Shaikha Lubna Al Qasimi, Managing Director, Tejari.com

Is the Middle East ready for e-commerce ?

Organisations from both the public and private sectors in the Middle East have demonstrated that they are ready to embrace the benefits of e-commerce. The rapidly increasing internet penetration levels among companies reflect this. Tejari.com is receiving e-mails and web site hits every day from companies that want to increase their market reach, improve their efficiency and save money through e-commerce. The Middle East has historically been a very vibrant trading hub, and now organisations here, including governments, are extending that trading tradition to the Internet. This is seen through the development of on-line 'communities'.

What is Tejari.com ?

Tejari.com is the Middle East's premier online business-to-business marketplace. Participation in Tejari.com enables buyers and sellers to transact and share information about a variety of goods and services via the Internet. Tejari.com provides a single point of contact for an open and growing community of buyers and suppliers, permitting spot-purchasing and on-line auctions that enable participants to have real-time access to new markets, while achieving greater cost savings. Visit Tejari at <http://www.tejari.com>

What benefits does an electronic marketplace offer for buyers?

Participation in Tejari.com provides buyers with real-time access to local, regional and global suppliers. Buyers can then utilise Tejari's marketplace to purchase a diversity of goods and services at lower cost with new internet-based business practices such as buyer auctions, consortium buys, and open market purchases. Through Tejari.com, buyers can also share product design information in real-time, enabling trading partners to collaborate and reduce new product rollout cycles. Finally, Tejari.com enables buyers to leverage market efficiencies and mandate standard buying practices throughout their organisations.

What benefits does an electronic marketplace offer for sellers?

Sellers on Tejari.com have instant access to new markets without any start-up costs. They have the capability to reduce the costs for retaining existing customers, and acquire new customers without the need for physical presence. Tejari.com also gives sellers access to up-date prices, load buyer-specific prices, demand information from buyers to optimise resources and provide the lowest cost, on-time delivery of high quality products and services.

Why should businesses use an electronic marketplace to deal with their existing trading partners?

The benefits of trading on Tejari.com with existing partners are very straightforward: increased revenue and profitability because Tejari's members reduce their costs by streamlining internal processes. Through Tejari.com, companies can shorten their supply chain while reducing inventory with better material planning and purchasing. These changes in the trading process lead to reduced costs and greater profitability.

Where do you think Tejari.com will be in five years' time?

With the speed of change in technology and business today, it's difficult to predict where exactly Tejari will be after five years. We anticipate that Tejari.com will have a diverse and growing community of buyers and sellers from the Middle East and around the world, all of which will be operating more efficiently and profitably by trading through Tejari's online marketplace. ■

HH Shaikh Mohammed Bin Rashid Al Maktoum, Crown Prince of Dubai and United Arab Emirates (UAE) Defence Minister, appointed Shaikha Lubna Al Qasimi as the managing director of Tejari.com, the Middle East's premier electronic business-to-business marketplace. In this capacity, Shaikha Lubna has drawn on her extensive experience in the IT and logistics industries to develop and manage a growing online trading community. Shaikha Lubna also heads the Dubai e-government team responsible for instituting e-government initiatives throughout the public sector.

@evolve



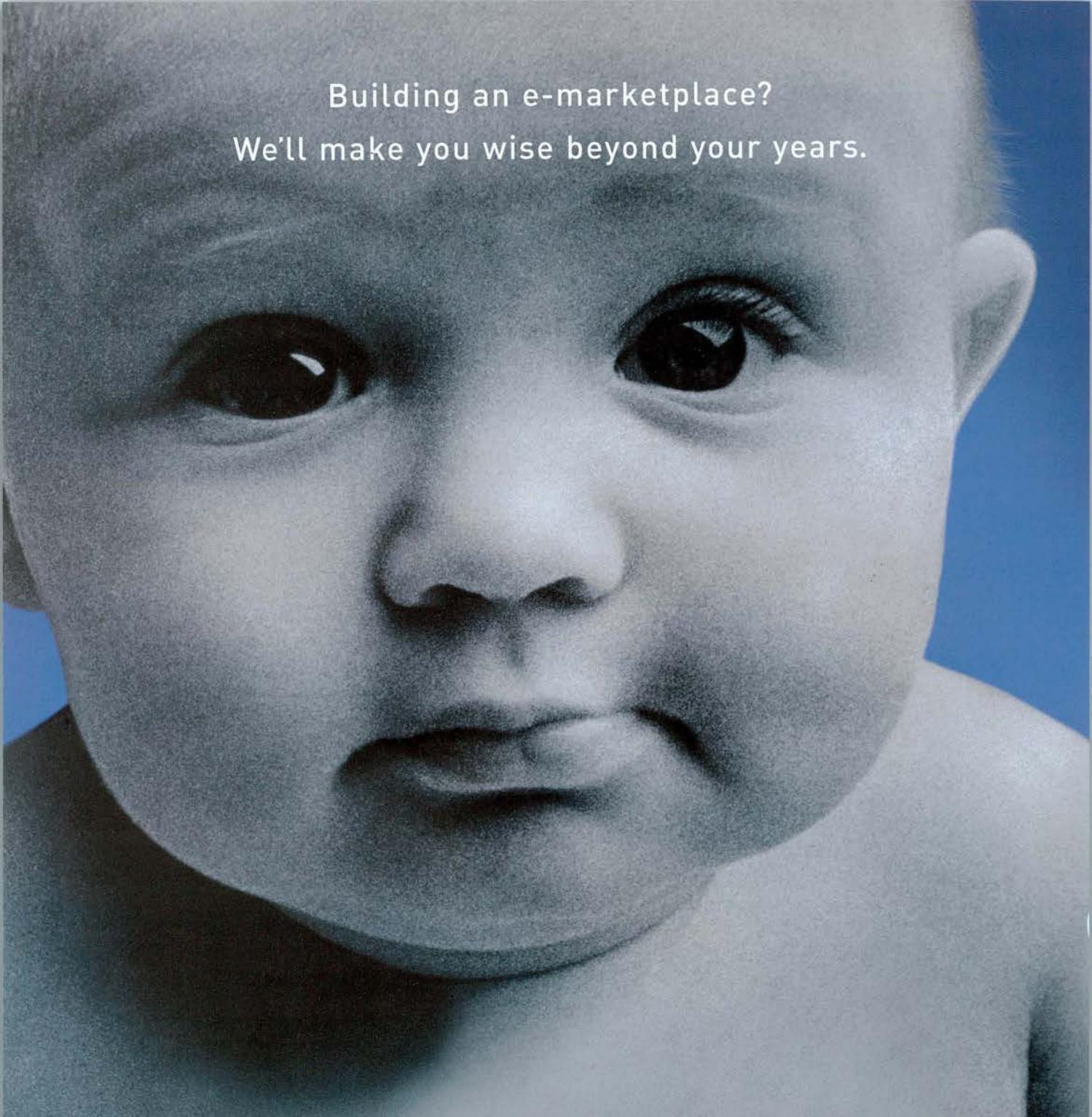
Get up to speed.

Success in the new global e-business marketplace begins here.

source | compare | negotiate | trade | reduce costs | increase sales

To sign up e-mail: sales@tejari.com. For more information visit our web site www.tejari.com or call + 971 4 881 1000, Fax + 971 4 881 8619.

Tejari
Business gateway to global markets



Building an e-marketplace?
We'll make you wise beyond your years.

LET US GUESS: This is your first e-marketplace. Don't feel bad. The entire online B2B industry is in its infancy. Of course, we feel like grandparents. After all, we've already built the world's largest B2B trading community, the Global Trading Web,[™] and are the partner of choice for Citibank, Compaq, GM, and dozens of other big players. Experience we'd love to share. Get experience. Get it right. Visit commerceone.com/emarketplace or telephone +44 (0)1753 483 000

COMMERCE
ONE 
MANY MARKETS. ONE SOURCE.[™]

E-commerce and trade: resolving dilemmas

JULIA NIELSON AND ROSEMARY MORRIS, TRADE DIRECTORATE, OECD

Open trade policies spur the growth of e-commerce. But e-commerce blurs the line between goods and services and raises issues for trade rules.

There used to be only two ways to buy a book: either order it via a catalogue or book club – a sometimes lengthy and unreliable process – or, more commonly, simply go to a shop, pay cash and take it home in a paper bag. Now, a customer can visit an online bookshop, view a book, read its blurb, browse through the shop's collection, make a selection, and pay for the book online. The book may be delivered physically or, in some cases, downloaded onto the buyer's computer. These new ways of buying a book apply to other goods and services too. And as many of the orders are international, this raises challenging issues for existing trade rules.

In other words, electronic commerce – the production, advertising, sale and distribution of products via telecommunications networks – is both dependent upon trade and transforming the way in which trade is conducted. Trade lies at the heart of these transformations, both of goods (e.g., computers) and services (e.g., telecommunications services), with liberalisation playing its part by making technology cheaper and more widely accessible.

Development tool

Electronic trade is booming. A growing number of products, from books to cars, are being marketed, sold and,



Trading by the Net

increasingly, delivered online, including across borders. While precise figures for e-commerce are hard to come by, it is estimated that e-commerce will grow to \$US2.5 trillion by 2004 (International Data Corporation, "The Internet Economy", www.idc.com). Electronic commerce has opened new markets for traders, large and small, including those from developing countries.

But for much of the world, ordering a book over the Internet is not yet a



© Reuters

reality. Good trade policy can help bring technology closer to users and in so doing, bridge the so-called digital divide.

In fact, the potential of e-commerce as a development tool is very much on the minds of trade policymakers. A large engine manufacturer in Europe can, via Internet, source a component to a small manufacturer in Asia, whose previous market was more local. This is because well-designed trade policies open up markets and increase access, bringing prices down for infrastructure and technology. Software engineering in India, insurance claims processing in Jamaica or remote bookkeeping in Zimbabwe: all have grown thanks to a mix of technology and trade opportunities. Traditional activities have benefited too, like farming and handicrafts, mainly by creating new possibilities for marketing, supply and distribution.

But while businesses around the world can use new communications technology to overcome many of the obstacles to growth, the cost of doing business remains very real indeed. After all, the software engineers still require computers and

has thus been not so much to remove existing barriers but to prevent their emergence in future.

Take customs duties. The WTO Declaration on Global Electronic Commerce, adopted in May 1998,

While coffee growers in Kenya can follow the market more closely, bypassing the middleman, they still have to get their goods into the consumer markets that count. What a pity it would be if e-commerce were thwarted by barriers such as high tariffs in key export markets.

telecommunications links, not to mention training. And while coffee growers in Kenya can follow the market more closely, bypassing the middleman, they still have to get their goods into the consumer markets that count. Despite the new opportunities of e-commerce, traders can find themselves thwarted by more traditional problems – such as poor transport and distribution networks, inefficient customs procedures, or barriers to market access in key export markets. Trade liberalisation in services can help to upgrade infrastructure and e-commerce and ICT can help improve the efficiency of customs procedures. But what a pity it would be if e-commerce was ready to offer consumers more choice and better prices, and suppliers a wider markets for their goods, only to be thwarted by barriers such as high tariffs or unnecessarily restrictive trade practices in key export markets.

There are currently few barriers to trade conducted via e-commerce over the Internet itself, partly for reasons of technological difficulty: it is harder to prevent a consumer from connecting to an online bookseller and downloading a book than it is to stop a physical book crossing a border. A primary aim of trade policy

called for a moratorium on the imposition of customs duties on electronic transmissions until the ministerial meeting in Seattle the following year. But the failure of that meeting means there is no agreement as to whether the WTO moratorium remains in force. Still, the Asia-Pacific Economic Cooperation forum (APEC), which accounts for over 40% of global trade, agreed in June 2000 to an APEC-wide moratorium on the imposition of customs duties on electronic transmissions until the next WTO Ministerial, expected before the end of 2001.

So, while e-commerce can help developing countries participate more in world trade, it poses some difficulties for trade policy. E-commerce has already had a major impact on international business practices, changing how transactions are initiated and managed and how relations unfold between buyers and sellers. It has blurred the differences between time zones; with the Internet, production and trade can be conducted around the clock and across the continents. It has blurred the boundaries between the old and new economies – car manufacturers use e-commerce – between tradable and non-tradable products, and between goods and services.

Fuzzy products

One problem at the heart of e-commerce trade is the definition of goods and services. If a book is ordered online, but is delivered physically, there is general agreement that, for the purposes of international

trade rules, it is a good. That makes it subject to the international rules for trade in goods, the GATT (General Agreement on Tariffs and Trade). However, if the book is delivered electronically – downloaded onto the computer – there is no agreement whether this digital product should be treated as a good under the rules, or a service, which would make it subject to a GATS (General Agreement on Trade in Services) regime. Not a trivial distinction, since there are important differences between the rules covering goods and services, including the type of market access granted and non-discrimination between national and foreign suppliers. For example, discrimination against foreign suppliers is, in general, forbidden for trade in goods, but not for trade in services. The status of these e-products is as yet to be agreed by member governments in the WTO.

Another issue that has arisen is whether commitments made under WTO agreements – in particular related to services – are “technologically neutral” – i.e., whether they also cover electronic delivery. Generally, WTO members and commentators argue that a country’s commitment to open its market for cross border supply of

accountancy services, for instance, applies equally whether those services are provided by letter, fax or over the Internet. However, some question whether specific commitments made during the Uruguay Round (which predates the e-commerce era) should include supply over electronic networks.

Liberalisation has helped

One point seems hard to deny: open trade policies have spurred the growth of e-commerce. They have driven technology costs down and made the basic information and communications technology (ICT) infrastructure more accessible. And liberalisation has helped to increase the size of markets available to innovators, stimulating activity even in countries with small domestic markets.

◆ The Agreement on Basic Telecommunications (ABT) of 1997 saw 69 countries make commitments to allow foreign companies to supply telecommunications services in their markets, most of which had until then been state-owned monopolies. The ABT is estimated to have opened up 95% of the world telecommunications market to competition, encouraging investment in new technologies and promoting pro-competitive regulatory principles. The ABT has contributed to the lowering of costs associated with telecommunications services.

But lower telecommunications costs as a result of open policies has perhaps been the critical contribution. In fact, there are direct links between lack of infrastructure

in liberalising this group of services, making electronic commerce even more accessible. The talks also hope to do something about making highly skilled people more mobile.

The GATS negotiations offer countries a chance to lock in pro-competitive reforms; disseminate best regulatory practices; extend their benefits on a most-favored-nation treatment basis; and send a strong signal to foreign investors on the irreversible nature of recently enacted policy changes, thus building their confidence in governments, particularly in transition and emerging markets, reassuring them that, for example, privatisation programmes will not be reversed at a whim.

Still, much remains to be done by way of international regulatory co-operation if cross-border trade in e-commerce is to grow to potential. Areas as diverse as data privacy; encryption technology; the development of secure payments systems; and taxation all raise legitimate public policy questions to which trade officials (as well as others) will need to find answers that meet public policy objectives without restricting trade, nor preventing the benefits of access and lower costs that flow from it. ■

If the book is downloaded onto the computer, there is no agreement whether this digital product should be treated as a good or a service. Not a trivial distinction, since different rules apply.

Multilateral trade agreements have helped e-commerce get ahead in many direct and indirect ways. Two notable contributions include:

◆ The WTO Information Technology Agreement (ITA) of 1997, which eliminated tariffs on a range of ICT products necessary for e-commerce, including computer hardware, computer software, telecommunications equipment, semiconductors, and other electronic components and equipment by January 1, 2000. By 13 September 2000, the ITA had 38 participants (counting the 15 EU member countries as one), accounting for 93% of trade in information technology products.

competition, high access costs and low rates of Internet use (See Databank). Moreover, competition among infrastructure and service providers, in combination with appropriate pricing and licence policies, has improved the quality of infrastructure and access services in several countries.

However, telecommunications infrastructure and services are not the only inputs; many other players also support e-commerce. Buying a book online also relies on a network of supporting services, such as computers, telecoms, finance and banking (especially payments), and courier and transport services. The current GATS 2000 negotiations will play a key role

References

- ◆ OECD, Economics Department Working Papers No. 252 "E-commerce: impacts and policy challenges", June 2000.
- ◆ Mann, C., *Global E-commerce – a policy primer*, Institute for International Economics, Washington DC, 2000.
- ◆ UNCTAD, *Building Confidence – electronic commerce and development*, Geneva 2000.
- ◆ The WTO's web site is <http://www.wto.org>
- ◆ APEC's web site is <http://www.apecsec.org.sq>



my business
e-business

“Who takes care of my customers
when I am asleep...?”

“IBM’s Websphere Commerce Suite solution does just that, and I can rest easy. My customers form the backbone of my business and their wants revolve around choice, quality and availability – finding what they want at a time and place convenient to them.

As for me, I want a profitable global business and that needs happy loyal customers.

IBM’s Websphere Commerce Suite solution brings it all together – my customers, my business, e-business.”



Some of the awards won by IBM’s Websphere Commerce Suite in the Middle East.

IBM

IBM, the e-business logo and Websphere are trademarks of International Business Machines Corporation. © 2000 IBM Corp. All rights reserved.

GBM
Gulf Business Machines

Tel: + 971 6 556 2260, Fax: + 971 6 556 3283,

e-mail: gbmdirect@ac.ibm.com

WWW.GBM4IBM.COM

IBM

IBM Egypt

Tel: + 202 331 0888, Fax: + 202 360 1227,

e-mail: ibm-direct@eg.ibm.com,

WWW.IBM.COM/SOFTWARE

SBM
Saudi Business Machines Ltd.

Tel: + 966 1 4056910 x 321, Fax: + 966 1 4025474,

e-mail: b_abdulnabi@sa.ibm.com

WWW.SBM.COM.SA

Digital lessons for digital policies

HERWIG SCHLÖGL, DEPUTY SECRETARY-GENERAL, OECD

Electronic commerce presents a raft of policy challenges for the international community. Agreement on basic principles for regulation and self-regulation is difficult but essential.

Developing countries may feel their problems are so different from those of the industrial world that they have little to learn from OECD members' experience of the digital revolution. After all, OECD governments seldom have to choose between computers and food, or between providing access to the Internet or safe drinking water.

Nevertheless, there are many lessons to be drawn from the OECD experience which are relevant for developing countries. The "digital divide" between the haves and the have-nots of the Internet world is not only opening up between industrial and developing countries, but also between different income groups within countries. Because of the global nature of this problem, it will certainly be a preoccupation of the OECD in coming years, particularly in its relations with non-OECD countries.

The OECD has worked to ensure non-members are involved in the information and communication technology (ICT) debate by inviting as many people as possible to join in annual ICT fora since 1997.

These meetings have included non-OECD members and representatives of civil society from all over the world, even if they have been held in OECD member countries. This year for the first time the event is moving



The Emperor has new clothes

outside the OECD, to Dubai in the United Arab Emirates. The decision to co-host the 2001 Emerging Market Economies Forum with the Dubai government is a measure of the OECD's determination to involve non-members in discussions of how we must all evolve to keep pace with the global information society.

The impact of ICT on policymaking has changed significantly over the past two decades. In the beginning, one of the main policy challenges for national governments seemed to be how best to

protect national champion hardware manufacturers from competition. But since then ICT has penetrated into all aspects of economies and societies, along with the concept of the knowledge-based economy. The growth of the Internet and electronic commerce has changed the relationship between governments and citizens in so-called "wired" industrial societies, but has also had an effect on government-to-government relations worldwide. Significantly, all of this has made the role of international bodies even more important.

Photo: Reuters

The OECD's work on the new economy suggests that the "old" economy is going to be with us for the foreseeable future. The first results of the *OECD Growth Study* published in May 1999 showed that while ICT is bringing about a restructuring of economic activities across a wide range of sectors, extreme claims, such as the death of the business cycle, or of a shift to a path of extremely high growth for the indefinite future as a result of the e-revolution, are unproven. These views are expected to be upheld when the second part of the *Growth Study* is delivered to OECD members in May 2001.

The US experience nonetheless argues strongly that ICT is a powerful engine of growth for any economy, now accounting for 30% of US economic growth and half or more of productivity growth, although the sector represents just 8% of the economy as a whole.

One thing is clear. While the best of the old economy will stay, there will be no turning the clock back on the digital revolution. The number of Americans online is growing by 40% a year, but Internet access in the rest of the world is growing even more quickly, the latest annual report from the US Department of Commerce shows (see article by Graham Vickery and Vladimir López-Bassols). This year for the first time North Americans account for less than half of the global Internet population of some 304 million.

The rapid spread of electronic commerce and the Internet worldwide has sparked lively debate about the prospects and desirability of global rules, notably in the areas of taxation

ICT is a powerful engine of growth for any economy, now accounting for 30% of US economic growth and half or more of productivity growth.

and security. While international law and global legal institutions exist, getting governments to agree on rules for a digital economy is another matter. For the moment, consensus that global regulation of the Internet in the wide sense is desirable or practicable is not even on the horizon.

Meanwhile, most OECD governments want to ensure that in terms of international regulations, there should at least be a non-discriminatory level playing field between electronic and conventional forms of commerce and that, in general, offline regulation should apply online. This can help ensure that continuing to do business offline does not put less Internet-ready economies and companies at a double disadvantage.

The lack of global consensus goes some way to explaining the appeal of co-operation and "soft law" options such as OECD Recommendations and Guidelines. These set out basic principles on which approaches to regulation and self-regulation can be based and which promote coherence rather than outright harmonisation. Such arrangements can also provide a measure of protection to developing countries that might otherwise find themselves overwhelmed by their more developed neighbours.

Furthermore, the OECD has produced a number of instruments of use to both industrial and developing

countries, such as the 1999 Guidelines on consumer protection in e-commerce, and analysis of the economic and social aspects of electronic commerce. It is also developing practical guidance on how to implement the 1980 OECD Privacy guidelines in an online environment, including the use of privacy statements and transborder data flow contracts. Work on taxation issues, such as the treatment of royalties, consumption taxes and ways to use e-commerce technologies to reduce the burden of paying taxes is relevant to both OECD and non-member countries.

The ICT revolution is affecting all of us, whether governments, businesses, or individuals in our roles as workers, consumers, citizens, or just plain individuals. The policy challenges are among the most exciting in any economic field. It gives us a real opportunity to achieve economic and social benefits rarely seen over the past century. If we are really serious about our goals of policy co-ordination, then it could well become a win-win situation for everyone. ■

References

- ◆ For more information on the OECD's work on e-commerce, visit the website at http://www.oecd.org/subject/e_commerce
- ◆ Or see the OECD's privacy policy statement generator: <http://cs3-hq.oecd.org/scripts/pwv3/pwhome.htm>
- ◆ For information on Consumer Protection Policy, see <http://www.oecd.org/dsti/sti/it/consumer/index.htm>

Learning to bridge the digital divide

Edwyn James, OECD Centre for Educational Research and Innovation (CERI)

Computers alone are not enough to join the e-economy. Digital literacy is essential too.

It has become increasingly clear over the past two years that offering the whole world a phone and a computer screen will not in itself help bridge the "digital divide" opening up across the world. The technology is practically worthless unless people are equipped with the know-how, and the willingness, to use it. Those who cannot use it confidently, whether whole countries, groups or individuals, will become increasingly marginalised within the modern world.

The case of Mexico's Telesecundaria programme, which has been adopted by several South American countries, shows how solutions depend as much on human expertise as on state-of-the-art technology. Thanks to Telesecundaria, computers in the classroom have transformed life for thousands of secondary school students in rural Mexico, bringing a full educational programme into the smallest village via a television screen or webcast. In every case, the Mexico model has worked largely thanks to the combination of well-qualified tutors at the transmitting end of the system, and local "persuaders" in the rural areas to win the students over to this novel educational method.

It remains true that the basic factor which leads to a digital divide is lack of access to computers and Internet. This is most acute in the less



Closing the gap

developed regions of the world. While technological advances may have enabled some developing

Technology is practically worthless unless people are equipped with the know-how, and the willingness, to use it.

countries, notably in Africa, to leapfrog straight from little or no phone service to mobile phones and the Internet, the gap between the

industrial and the developing world remains enormous. Almost a third of people in industrial countries had access to a computer in 1998 compared with barely 3% in the developing world, the World Bank found in its World Development Report 2000/2001.

Evidently, many have little or no awareness of information and communication technology (ICT). In 1997, more than 30 African countries had less than one telephone line per 100 people, according to OECD figures. It is not simply that the

Photo: Reuters

Knowledge divide

society and government

"haves" are at an advantage, but that the "have-nots" are at increasing risk of social and economic exclusion.

Countries which lack a firm ICT infrastructure become marginalised as electronic commerce grows in importance. They are incapable of

Infrastructure Commission, in *Learning to Bridge the Digital Divide* (see references).

The international community is well aware of the problem for developing countries, but it does not stop there.

Even in the United States, spending on technology training for teachers has increased only slightly, to 5% of the technology budget in 1998-99 from 4% in 1994-95.

sharing in the new route to prosperity which e-commerce affords, and remain dependent on the export of basic commodities, for which the world price is often in decline. Africa's share of world trade has fallen from about 4% in 1980 to less than 2% today, according to IMF figures.

"It is necessary but not sufficient to provide avenues to information and knowledge. What is more important is to empower people with appropriate educational, cognitive and behavioural skills and tools," says Wadi D. Haddad of the Global

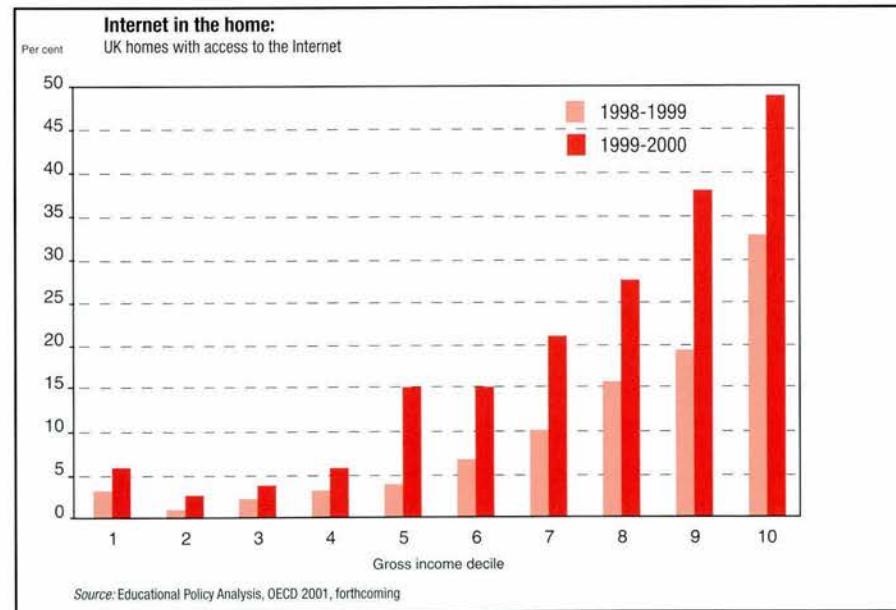
Industrial countries are also struggling with a widening gap between groups at different educational and income levels, raising fears that entire sectors of society may be excluded because of their inability to use, or afford, ICT.

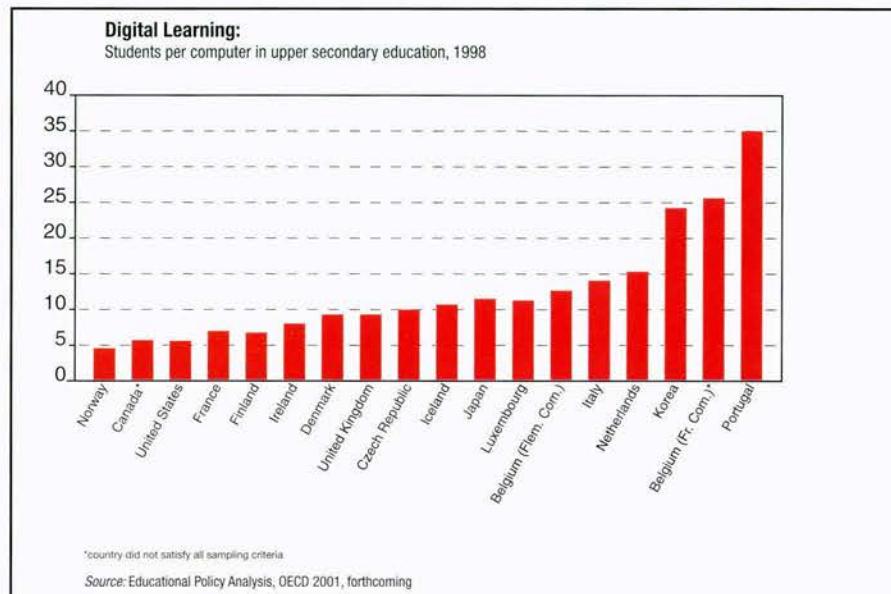
The problems are illustrated by the ratio of students per computer in upper secondary education in OECD countries. Significant differences are already evident between these industrial countries and they are likely to be maintained. While Portugal, with one computer for 35 students, is

improving its student-computer ratio, at the other end of the scale Norway, which already has one computer per five students, may be upgrading the quality of its equipment. And even if schools have the computers, they need fully trained teachers to make use of them. But such training is not keeping pace with demand in the industrial world. The neglect of teacher ICT training, which tends to lag behind physical investment, is a major obstacle. Even in the United States, which has placed a high priority on the use of ICT in education, spending on technology training for teachers increased only slightly, to 5% of the technology budget in 1998-99 from 4% in 1994-95.

Furthermore, the fact that a country has a high level of access to ICT may conceal considerable inequity within the population, adding a new factor, wealth, to the digital divide equation. The recent dramatic increase in Internet access within the UK in a single year highlights the growing disparity between the richest and the poorest sectors of society. Access for the nation's poorest 10% more than doubled during the year, but was still barely 5%, while at the upper end of the scale access was close to 50%.

Other disadvantaged groups can be identified in advanced countries, such as linguistic and ethnic minorities, those who live in isolated communities and those who are socially excluded, for whatever reason. Women in many societies are much less likely than men to have access to ICT. And there may be inter-generational gaps, such as for men in mid-life whose work skills are no longer in demand, whose





modest educational achievements have left them ill-equipped even to want to become computer literate. For some, the workplace stimulates awareness of the potential of ICT

in isolation. Quality in the learning experience requires an abundant supply of appropriate multimedia learning materials, which entails partnership between the suppliers

Familiarity and competence with ICT may provide an entrée into corporate life for those who were previously excluded.

and promotes the development of ICT skills. Others, lacking this incentive, are left aside.

Here too, experience is already showing the value of targeted educational effort. Schemes in which well-qualified tutors use ICT for unemployed adult learners in the United States have not only imparted significant ICT skills, but have given a new confidence and self respect to the learners, as they realise that they have mastered what many who are better educated have not yet begun to grasp.

Whether in the workplace or the classroom, the teacher cannot work

and the users. Mindful that much learning extends beyond the formal system, effective dialogue is needed among all the parties concerned, extending to employers and the learners themselves, with governments working in partnership with them. It is for governments to "broker" arrangements between educational ICT developers, suppliers and users, both in the public and the private sectors, to promote quality in the use of ICT for learning, and to encourage research.

Digital literacy is worthwhile not only for its own sake; it can contribute handsomely to overcoming severe structural weaknesses within society.

The flexibility and versatility of e-learning may transform the situation of adults who had little formal education, or who achieved little educational success in earlier life. Familiarity and competence with ICT may provide an entrée into corporate life for those who were previously excluded. It may draw more of the population into the decision-making of the democratic process, thereby making for a society more at ease with itself. For many, ICT becomes the key to lifelong learning, and once the habits of lifelong learning are widely in place, learning becomes the key to capitalising on the huge potential benefits of ICT. ■

References

- ◆ OECD/CERI, *Learning to Bridge the Digital Divide*, 2000. Results of a Roundtable in December 1999, organised jointly by OECD/CERI and the US National Center on Adult Literacy.
- ◆ OECD/CERI, *Education Policy Analysis*, 2001 (in preparation).
- ◆ UN/IMF/OECD/World Bank, *A Better World for All*, 2000.

Online government: a surfer's guide

EDWIN LAU, OECD PUBLIC MANAGEMENT SERVICE

For whatever reason – cost of paper, public pressure, political tastes – governments around the world are going online. Here is a guide to some of the web sites.

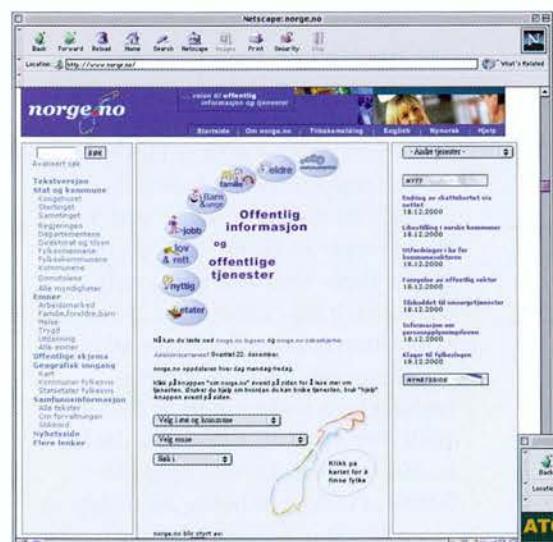
OECD members have embarked on an “e-government revolution”, using new technologies to provide more convenient access to public information, improve the quality of public services and make it easier for citizens to have a say in government.

- ◆ United States:
<http://www.firstgov.gov>
- ◆ Norway: (national portal)
<http://www.norge.no>

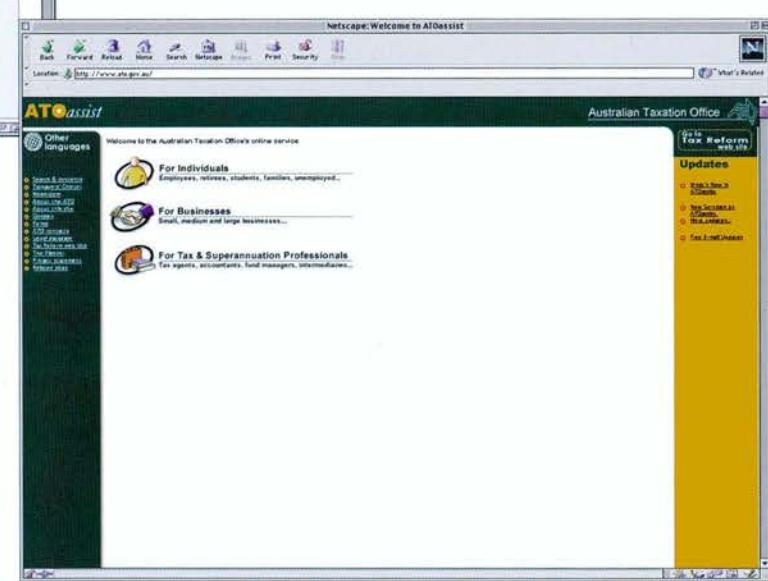
Whereas the first step to going on line involves digitising government information, the second stage of e-government is delivering interactive services to citizens. Perhaps not surprisingly, tax collection is one of the areas in which countries have made the most progress in terms of web accessibility (see article on Chile in this section). Citizens can pay their taxes online in a number of countries, including France, Australia, Greece and Italy.

- ◆ France:
<http://www.finances.gouv.fr/IR2000/ir2000.htm>
- ◆ Australia (e-tax):
<http://www.ato.gov.au>
- ◆ Greece (TAXISnet):
<http://www.taxisnet.gr>
- ◆ Italy (pilot project):
<http://www.finanze.it/>

E-government is changing the way that services are delivered. Sweden, for example, has proposed criteria for providing central e-government services 24 hours a day, seven days a week (24/7 services). Countries are also increasing access to e-government information and services by making the Internet available in public libraries, schools and public spaces.



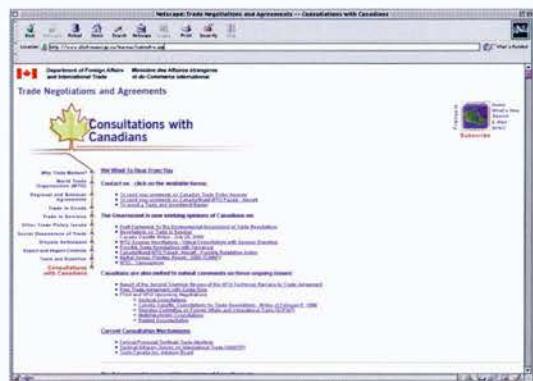
All OECD countries provide government information online, but the quantity and range varies considerably. Some OECD governments have tried to organise online services to reflect the way citizens use them and not internal bureaucratic structures. The government web portals of the United States and Norway provide a single entry point to access hundreds of public web sites.



Portugal and Spain have both installed public kiosks for e-government services. And Internet terminals can now be found in some Paris metro stations.

- ◆ Sweden (24/7 plan):
<http://www.statskontoret.se/24-timmarsmyndighet/summary.html>
- ◆ Spain (Citizen Attention Points):
<http://www.map.es>
- ◆ Portugal (INFOCID):
<http://www.infocid.pt>

The third stage of e-government is increasingly interactive, allowing



governments to use information technology tools to engage citizens in the development of policies, programmes and services.

E-government makes it easier than ever to collect user feedback in order to improve and tailor services. Countries are also experimenting with different forms of on-line consultation and e-democracy (electronic and online voting), although no country has yet fully installed a system allowing citizens to vote online instead of going to the polling station during national elections. Governments do however post policy documents and draft laws on web sites for comment, and are able to receive solicited and unsolicited feedback. The Netherlands and Canada

are developing consultation guidelines for improving citizen participation in public decision-making.

- ◆ Netherlands: (consultation guide) <http://www.minbzk.nl/pdfs/oe/actie/elcivco.pdf>; (list of electronic discussions) <http://www.overheid.nl/discusses.htm>
- ◆ Canada: (consultation on WTO) <http://www.dfaid-maeci.gc.ca/tnanac/consult-e.asp>

None of these initiatives, however, will work unless governments change their internal practices to keep up with the increased pace and quality demands of providing e-government services. This includes improving internal communications and knowledge management, providing incentives for reform, and learning how to manage large-scale IT investments. Many OECD countries have published strategic plans for implementing their e-government initiatives. The UK Modernising Government White Paper, for example, includes multi-year targets for moving services online (see article in this section by Lucian Hudson). Governments also

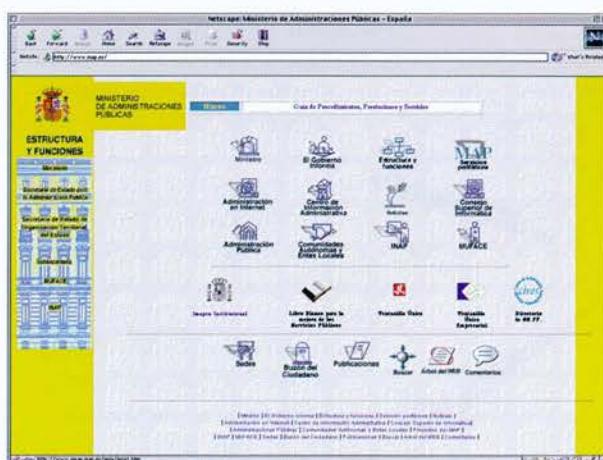
need to ensure privacy and compatibility of systems in order to provide a secure and reliable framework for electronic transactions. Finland recently passed legislation on electronic transactions that provide guidance for the whole administrative process, from filing a request to getting a decision.

- ◆ United Kingdom: www.cabinet-office.gov.uk/moderngov/whtpaper/index.htm
- ◆ Finland: <http://www.om.fi/>

OECD's public management service is working with the Italian government to organise the Third Global Forum on Governance, on 15-17 March 2001 in Naples, Italy. The forum, entitled "Fostering Democracy and Development through E-government", will look at good e-government practices as well as governance implications and ways to bridge the digital divide. ■

References

- ◆ Visit the Naples forum web site at <http://www.globalforum.it> or contact Edwin.lau@oecd.org
- ◆ For a list of government web sites worldwide, visit <http://www.vive.net/>



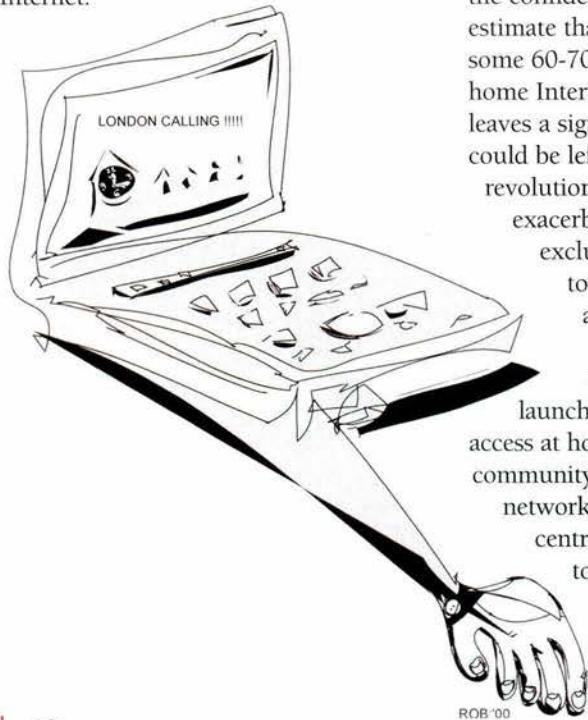
e-Governance: one country's strategy

LUCIAN HUDSON, THE UK GOVERNMENT'S WEBMASTER GENERAL

How the British government aims to put the citizen online.

The volume of e-commerce expenditure in the United Kingdom grew by 350% in the last year. Clearly, despite current tales of woe on the back of the NASDAQ's slide, this is not just a dot com fad, but a revolution bringing with it fundamental changes. Businesses, individuals and government alike are all affected by it.

In September 2000 the UK Prime Minister, Tony Blair, launched UK online, a drive to make this country one of the world's leading knowledge economies and ensuring that everyone in the UK who wants it will have access to the Internet.



The UK government knows what it wants. Indeed, my role as Director of e-Communications in the Office of the e-Envoy, part of the Cabinet Office, reflects this determination very well. In short, we are leading the drive to make the United Kingdom one of the world's leading knowledge economies.

And governments do have a crucial role to play. By this I don't mean any old fashioned notions of state intervention, but a role complementing that of the market and responding to the expectations of our consumers – our citizens.

The key words are access, skills, and the confidence to use the Internet. We estimate that the market will provide some 60-70% of the population with home Internet access by 2003. This leaves a significant minority who could be left out of the Internet revolution. This digital divide could exacerbate problems of social exclusion. That is why we aim to achieve universal Internet access by 2005.

To this end we have launched initiatives to promote access at home, at work and in the community. We are establishing a network of almost 6,000 UK online centres which will allow people to access the Internet and familiarise themselves with basic ICT.

Governments must also provide the right market framework to allow e-commerce to thrive. For us this means taking a new look at our regulatory and legislative framework to remove all barriers to e-commerce. We have pledged to make the United Kingdom the best place in the world to trade electronically by 2002.

We are also targeting support at businesses to help the United Kingdom develop a vibrant, competitive business community using e-commerce to its fullest potential. The Department of Trade and Industry's *UK online for business* campaign will be deepening the support and advice offered to small business. This £25 million campaign will focus on ensuring that the benefits of e-commerce are understood by all firms.

The development of the Internet has led consumers to demand a lot more of service providers. In an age where someone can carry out banking transactions online 24 hours a day, people are a lot less willing to put up with bureaucratic delays from government.

Our goal is to have all government services accessible online by 2005 at the latest. We have already made some good progress on this.

In fact, some 33% of government services are already online. You can

access health advice, submit your income tax self-assessment, and access Foreign Office advice for travelling abroad. By 2002, some 70% of services will be online, including VAT registration and the direct booking of hospital appointments by general medical practitioners. And by 2005 all services will be online, including claiming benefits, applying for a passport and accessing patient health records. We aim to achieve this target as quickly as we can, but some areas require substantial investment before going online.

We are also working to ensure that government services evolve into a form which is much more citizen-driven. A good analogy to illustrate this point is an anteater contemplating its next meal. The anteater does not see hundreds and thousands of individual



people have to deal with a number of agencies separately.

For example if someone loses their job, they have to deal separately with the employment agency, the social security

By 2005 all UK government services will be online, including claiming benefits, applying for a passport and accessing patient health records.

ants when it approaches an anthill. Instead it sees a mass of ants, waiting to be hoovered up.

Right now, the public tends to view the government in the same way. They don't see the individual departments providing services. Instead they see one mass which they call "Government". We must recognise this and respond by presenting services to the public in ways which are meaningful to them. In other words, those closest to the web site's target audience should decide the content.

At present our services are organised and delivered in Departmental Silos. This means that for a life event

department, the Inland Revenue, and probably their local authority.

This kind of bureaucracy is increasingly unacceptable. People shouldn't have to know who does what. The work we are engaged in right now is joining up public services. The new UK online Citizen Portal at www.ukonline.gov.uk will be organised around specific life events such as moving house. This will mean that people will provide us with the information once and it will then be passed on to the relevant agencies.

In fact, the point of access for the citizen need not necessarily be a

government portal or website. Certainly, we will enable people who want to access government services directly to do so. But for many activities what people really want is a mixture of private and public sector services and the government gateway will allow this.

If someone is moving home, they may want access to government or local authority databases on land titles and planning restrictions, but they need to deal with private sector real estate agents and lawyers. We plan to license access to the government gateway so that private sector firms can offer the mix of services that people want. These changes are for now, but the Internet has evolved rapidly in the last few years. We must be ready to think strategically about where we want to be in the future. New technologies will continue to develop at a rapid pace. We must be ready and willing to respond to them. ■

Reference

◆ www.ukonline.gov.uk

Taxing time for e-government

LISELOTT KANA, HEAD OF INTERNATIONAL TAXATION, SERVICIO DE IMPUESTOS, CHILE FINANCE MINISTRY
AND FERNANDO BARRAZA, SUBDIRECTOR OF INFORMATICS, SERVICIO DE IMPUESTOS INTERNOS

Can governments use the Internet to offer more effective services to their citizens and, more importantly, can people be persuaded to use them? Chile's tax experience suggests that the answer is a resounding "yes".

The Internet was still in its infancy in 1994 when the head of Chile's tax service, Javier Etcheberry, saw an important role for it: a tool to help his department provide an efficient, high-quality service to the community. Perhaps an expected task for any modern democratic government, but it was a brave and inspired move at the time. And it is one that has been thoroughly vindicated; this year more than half the tax information filed by employers and a quarter of the country's income tax returns were filed online.

The Chilean tax administration, Servicio de Impuestos Internos (SII), gave top priority to online development as soon as the strategic decision was made to use the Internet for tax purposes. The SII was so far ahead in this field that it has become the main Internet technological model in Chile and the undisputed leader in the modernisation process in the public sector, as well as acting as a role model for many other public institutions.

The Internet has been a boon all round. It has enabled the Chilean government to streamline the troublesome and bureaucratic filing process for taxpayers, while at the same time reducing the potential for

tax evasion by having more correct information in its data bases. Costs have been reduced for both government and citizens. The cost of processing information is lower as there are fewer third parties involved, no physical movement of printed information, and less administrative

This year more than half the tax information filed by employers and a quarter of the country's income tax returns were filed online.

work. The government saves on the cost of providing information for the public in the form of paper, copies of forms, transcriptions, and so on. It also saves on the cost of amending any errors, not to mention on staff time in local and central offices.

For taxpayers the use of the Internet can spare time-consuming visits and phone calls to the tax office, and has made the whole tax assessment and tax collection process much more transparent. There is also better access for the taxpayer to more detailed and timely information concerning tax issues. As a result, it has become easier for the taxpayer to meet his tax obligations.

The SII web site performs two key functions. One is the interactive function that enables taxpayers to

communicate with the administration and carry out procedures from one computer to another. The other function is as an information provider. The taxpayer has access to information about tax laws and changes to regulations, and also to information about themselves given to the administration by third parties such as bank managers and employers. Access to such sensitive information is protected by a personal code, and allows the taxpayer to check immediately for any erroneous information on file. Business taxpayers can file their value-added tax returns on a monthly basis online to the SII, and individuals can file their yearly income tax returns in the same way. Both types of taxpayer can also use the interactive SII site to modify or rectify their returns. Agents who withhold tax at source for the government, such as banks, can also file their annual declarations electronically.

Privacy and security are key issues in persuading people to confide their personal financial details to a computer screen. Chile has sought to build confidence through a system of several layers of protection. A taxpayer wanting to consult his/her tax returns would have to put in a personal tax identification number (each Chilean taxpayer has such a number), plus a secret code, plus the number of the filed tax return. A further assigned

code is needed to change or update information in a taxpayer's file.

One advantage of preparing a tax return online is that an automatic programme checks the tax return for logic and arithmetic errors, as well as any missing information, before it is accepted. And after the income tax return has been filed, the taxpayer can keep track of its progress through the system by looking it up on the Internet. This consultation is available to all taxpayers, even to those who preferred to file their returns on paper. And with formal notification of inconsistencies a feature of the online file, it allows the taxpayer to point out any immediate problems that require further action. The taxpayer can also rectify or modify the return electronically, thereby resolving any problem without having to go to his or her local SII office.

The SII is constantly expanding the facilities it offers online, and in 2000, for the first time, taxpayers were able to access the information about them sent to the tax authorities by employers and other withholding

agents, again with the possibility of detecting inaccuracies or errors. So rather than taxpayers receiving bills and then complaining afterwards, mistakes can be rectified early on.

It has not all been plain sailing however. There have been one or two systemic snags, particularly where old systems meet new. Take the banks for instance. Taxpayers should have been able to file their income tax return online and if they owed the government money, arrange for electronic payment by their bank. But for that they had to obtain an "Automatic Pay Agreement", a service that many banks were just not ready to provide in March 2000, the end of the last fiscal year. As a result, many taxpayers had to file their payments on paper. But these problems are being ironed out, and the banks should be more prepared for March 2001.

The success of Chile's online tax endeavour is perhaps best measured by the growing number of people using the Internet in their dealings with the SII. According to a 2000 study, some 860,000 people had Internet access in

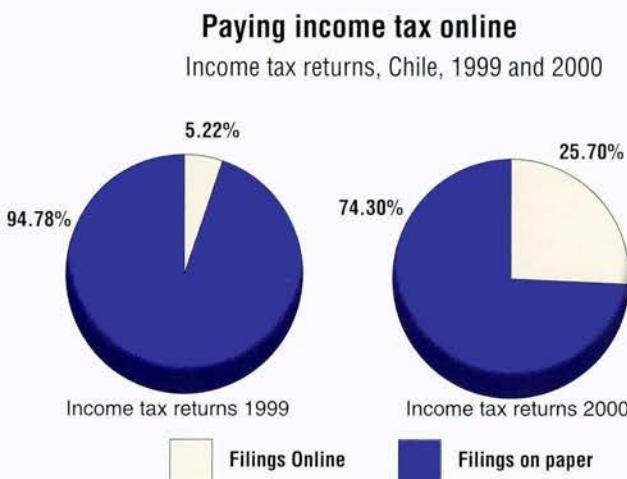
Chile. And 85% of that number, some 734,000 of the country's almost 2 million corporate and individual taxpayers, are using it for their tax business, making the SII website one of the biggest in the country. Employers, banks and others filing information on wages, interest, and dividend payments to third parties accounted for 57.5% of the 713,282 files received in 2000, compared with just 4.2% in 1998. In terms of the volume of information received, 94.9% of total information required came from the electronically filed statements, compared with 40.5% in 1998. The take-up level by individual taxpayers was somewhat slower, with some 25.7% of income tax returns filed online in 2000. Still, this was a massive 523% increase from 1999. And a relatively small proportion of Chileans file individual income tax returns as tax is deducted at source from their pay cheques.

And the process does not stop here. The Chilean tax administration is already studying various possibilities of further promoting new technology. Next year, the SII will offer income tax returns that are ready-filled out, electronically incorporating income reported to the administration by third parties. When the completed return is filed, reception will be acknowledged with digital certificates and electronic signatures. The challenge is to use the technology to continue promoting tax compliance, while ensuring that the tax administration becomes even more efficient and transparent. ■

References

- ◆ For information on the OECD's work on e-government, visit the public management web site at <http://www.oecd.org/puma/>
- ◆ The Chilean government's tax web site is at <http://www.sii.cl>

Source: SII



Digital workplaces, unions and trust

JOHN EVANS, GENERAL SECRETARY OF THE TRADE UNION ADVISORY COMMITTEE TO THE OECD (TUAC)

Social protection and representation are as important as ever in the new economy.

In 1980s Britain a leading government figure famously told the unemployed to get on their bikes and find a job. By 2000 that quip might have been "get on the Net and start up your dot.com". During the NASDAQ boom of recent years, the advice made some sense, and getting a job with a new economy star firm was a tantalising option for many. But then came the hype: the business cycle was dead, we were told, and the hierarchical relationships between employees and employers had been flattened forever.

All too good to be true it seems, as dot.coms fold and lay off their workers. Economists are now wisely telling us that while there may be a new economy, old economy principles must still apply, such as good management, financial prudence, and so on. These basics apply to labour too, like stable work environments. But then again, workers have always played a central role in the e-commerce success story. The trouble is they can also be its victims; according to recent reports, US dot.coms axed some 40,000 jobs in December 2000. Redundancy, e-dundancy, it is all the same in the end.

New technology promised to empower job-seekers, many of whom have done very well, notably in e-commerce. But the accelerating pace of change and mounting work

pressure are causing anxiety and insecurity. This is not a good foundation for a high performance economy. Nor would the spectre of unemployment help if the US slowdown continued, despite interest rate cuts, or spread around the world.

It is high time we stepped beyond the simplistic notion of "labour market flexibility", where workers are expected to give up social protection, decent wages, or job security. We must restore the objective of achieving full employment by ensuring that economic policies translate potential productivity increases into real social and economic gains.

Ironically, in today's individualistic society the importance of unions (i.e. workers acting collectively) may well increase globally, confounding those who predicted that unions would wane. In 1999, the membership of affiliates to TUAC in North America and the United Kingdom went up for the first time in two decades. Meanwhile, the US communications workers union (CWA) has seen its membership soar from zero to 10,000 in cell phone communications in just a few years. These trends reflect a real demand among workers for protection and representation, including new economy workers. After all, working in a dot.com warehouse is not devoid of old economy realities. New unions

are emerging, such as the Washington Alliance of Technology Workers (WashTec), to campaign for basics like job security, fair compensation, a company voice and education. Its membership includes mobile professionals who now recognise that moving from job to job has its downsides, especially if contracts become scarce, jeopardising pension payments and entitlements for instance. This type of uncertainty is driving isolated workers together, even across borders.

Beyond representation, unions encourage training too; indeed, OECD research shows that unions tend to raise the amount of training done by firms, spurring innovation and productivity growth. And let us remember that not everyone has benefited from the e-commerce boom. Too many workers still live below the poverty line.

E-commerce clearly has great potential for countries everywhere. Unions can counterbalance the centrifugal forces created by globalisation and technological change in a way that individuals cannot. Like businesses, they have to evolve with the times. But like businesses, the basic ground rules remain the same. ■

Reference

- ◆ Visit <http://www.tuac.org>

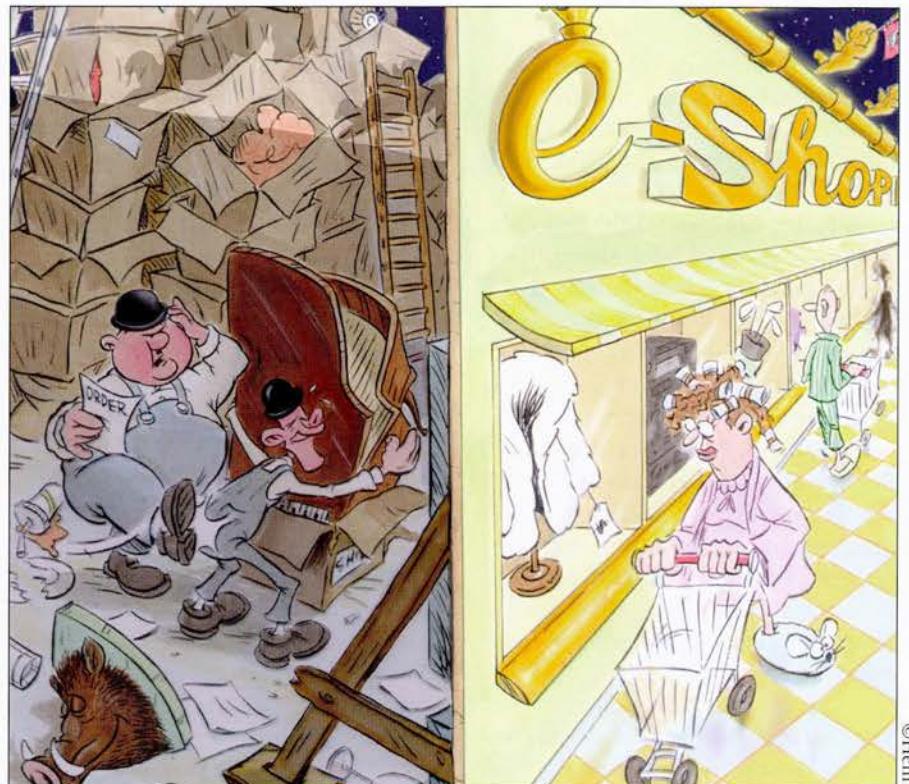
Confidence and e-commerce

MARC ROTENBERG, EXECUTIVE DIRECTOR OF THE ELECTRONIC PRIVACY INFORMATION CENTER (EPIC), WASHINGTON, DC

The Internet offers boundless opportunity for the exchange of information and ideas, not to mention goods, across the globe. But how far should governments go in protecting consumers?

Should governments be responsible for protecting consumers' rights in the Internet economy? If the answer is yes, how can governments safeguard their citizens' interests when they do business from a home computer with companies on the other side of the globe? These are the key challenges facing governments in the Internet age. Apart from consumer protection, policy makers have to decide what to do about privacy, taxation, copyright and a whole series of other issues that have acquired a new importance because of the digital revolution.

Some governments express a preference for regulation, others for self-regulation, and still others for co-regulation. But a simple "one size fits all" approach may not provide the best guidance for developing policy in the complex, fast-changing online realm. In matters of privacy and consumer protection, governments should seek to establish enforceable rules to safeguard users' interests. This would promote the stability and predictability needed for commerce to flourish. But when it comes to the content of the information that flows across the Internet, governments should avoid legislation. The open exchange of information and ideas is critical to the continued growth of the information economy and the protection of citizens' basic rights.



This approach does not fall neatly into the basket of regulation, self-regulation, or co-regulation. Instead it seeks to encourage governments to adopt the policies and roles that are most likely to produce economic growth, protect the interests of the individual and build on the open nature of the new communication infrastructure. It has become increasingly clear, for example, that the absence of a clear legislative framework has contributed to public concern about loss of privacy. This in turn has made it difficult for businesses

to establish trust and confidence in new services and business models. Even where companies have pledged to safeguard their customers' interests, competitive pressures and market opportunities have often forced them to revise their policies, invariably to the detriment of the customers. For example, the Doubleclick company announced that it would match anonymous web surfing data with customer purchase information. This led to a public protest, private litigation, and government

investigation. In the end, Doubleclick went back to the original plan, but public scepticism of Internet advertising was widespread and the sector has suffered greatly. The problem is all the more challenging as consumers now have the opportunity to buy goods and services from companies all around the world.

The OECD anticipated the need for international standards to protect privacy in a world of transborder data flows almost 20 years ago. The OECD Privacy Guidelines, which set out eight basic principles for the collection and use of personal information, remain the most robust framework to safeguard personal privacy in the age of a global economy. Although the guidelines do not have the force of law, they provide the basis for national law in Europe, North America, and Asia. And the guidelines contributed significantly to the Safe Harbor Arrangement on transatlantic privacy protection reached by the US and EU in March 2000, avoiding what could have been a significant barrier in the emerging online economy.

The challenge now is to implement and enforce these privacy protection standards at both the national and international level. New technology can help in this process. The Internet has made it possible for organisations to make clearer to people how the information gathered about them will be used. This helps build trust and confidence. New encryption techniques may also make it possible to carry out anonymous transactions, avoiding the need for collecting personal information at all. This was anticipated by the OECD Cryptography Guidelines of 1997 that have also contributed significantly to the development of

international policies favouring the protection of privacy and the growth of economic opportunity.

National governments can ensure that their new legal frameworks are compatible with those of the leading industrial nations by following the approach on privacy protection set out by the OECD. And as the convergence of the information economy accelerates, these standards may soon provide the basis for a global agreement on privacy protection.

The Internet must maintain its diversity of opinion, beliefs, and perspectives in order to develop. But governments should safeguard users' interests.

Similar framework legislation is now needed in the area of consumer protection. What assurance do consumers have when they purchase goods and services online that the safeguards available under their national laws will cover them if they have trouble with a business in another country? Here the experience of the OECD is more recent and, as yet, untested. The recently issued Guidelines for Consumer Protection in Electronic Commerce address critical issues for the online economy. The guidelines cover issues such as transparency; fair business, advertising and marketing practices; as well as payment, dispute resolution and redress. These principles offer guidance to governments and reflect common ground in the effort to establish "rules of the road" to safeguard consumers and promote business. As with privacy protection, new technologies can assist in consumer protection by ensuring

that payment mechanisms are secure, that billing is correct and that redress procedures are fair, transparent and easily pursued.

But it is perhaps significant that the OECD has been reluctant to issue standards for regulating the kind of information that could flow across the Internet. It is important to ensure that the traditions of specific countries and cultures are respected. But it is equally important that no one country determine the information that is appropriate for others to receive. The Internet must maintain its diversity of opinion, beliefs, and perspectives in order to develop. Openness remains the key to innovation, freedom and progress.

Where there are specific challenges, they are best addressed under national law, with due regard for international norms that seek to preserve the free exchange of information and ideas, such as the Universal Declaration of Human Rights. And as governments continue to explore the appropriate role for legislation, it will always remain vital to ensure that the public voice is represented in decisions concerning the future of the Internet. Business and government alone cannot make the rules. Civil society should always have a seat at the table. This will promote public understanding and awareness of new policy issues as they arise. ■

References

- ◆ Visit the EPIC web site at <http://www.epic.org/>
- ◆ Visit the Public Voice web site at <http://www.thepublicvoice.org>
- ◆ Marc Rotenberg, *The Privacy Law Sourcebook: US Law, International Law, and Recent Developments* (EPIC) <http://www.epic.org/pls/>
- ◆ See the *OECD Privacy Guidelines* at <http://www.oecd.org/dsti/sti/it>

Virtual conferences: a new way to network

NATALIE DOMEISEN, SENIOR PUBLIC INFORMATION OFFICER, INTERNATIONAL TRADE CENTRE (ITC)

The Internet offers new opportunities to join in international discussions without the disadvantages of costly and time-consuming travel.

Small businesses in developing countries now know where to go to bid for supplies at the best price worldwide, and how to avoid some of the commonest pitfalls of e-commerce, thanks to a conference organised by the International Trade Centre (ITC) in Switzerland. Conveniently, they did not have to worry about getting there, since the conference took place by e-mail.

Networking, long recognised as a useful tool for business, is taking on a new lease of life as the virtual world of the Internet offers new

**Planning and organisation
are just as important in the
virtual world as in a
conference hall.**

opportunities for international discussions without the disadvantages of costly and time-consuming travel.

To organisations like the ITC, e-mail discussions can be particularly useful in providing a low-cost and efficient way of promoting debate between business in developing countries and trade development organisations. A recent series of ITC e-mail discussions on the challenges and opportunities

offered to exporters in developing and transition economies by e-commerce attracted nearly 600 participants from 86 countries, some 80% of them from the developing world.

The debates enabled businesses in countries from Nepal to Peru, and Vietnam to Kazakhstan, to share their experiences of e-commerce, from problems such as



Virtual conferences

society and government

high telecom costs at home, to useful solutions such as global supply auctions. It also offered ITC a vision of the needs of would-be e-commerce exporters in the developing world, right down to basic questions such as where to start.

The three e-mail debates, spread over three months, enabled participants to offer input before the Montreux discussions began and to continue exchanging ideas afterwards.

The experience proved the usefulness of virtual networking, but also offered a series of lessons in how to ensure that such exercises are successful. In fact, planning, tight organisation and follow-up are just as important in the virtual world as in a conference hall.

Most important is a clear focus for the discussion. In the ITC's case, the topic on the table was export development and the digital economy. A clearly-defined topic not only ensures that the debate remains on track, but ensures visibility and support from staff and management.

The physical debate, called the Executive Forum on Export Development in the Digital Economy, was co-organised with the Swiss state secretariat for economic affairs, and was held in Montreux. The ITC was determined to share the debate with as many people as possible. But at the same time they wanted to limit numbers at the actual event in order to keep the discussion fruitful.

The solution was a series of three e-mail discussions as a complement to the forum, which enabled interested parties all over the world to follow the debate in Montreux

and offer their own comments on e-commerce issues.

The e-mail debates, spread over three months, enabled participants to offer input before the Montreux discussions began and to continue

exchanging ideas afterwards. The tight focus of the Montreux meeting was a boon for the virtual debate, ensuring that the e-mail discussion did not wander off into diffuse exchanges of irrelevant messages. So while one participant cautioned that having access to the Internet and creating a web site were not enough in themselves to create a flourishing e-business, another offered the address of a global auction site, and a third suggested how chambers of commerce could be a useful forum to trade experiences and help.

The organisers also took care to target a clearly-defined group of participants to the e-mail discussion, focusing on developing countries.

E-conferences on the web are not that uncommon, but conferences by e-mail are fairly unusual. Yet they have distinct advantages. For instance, participants automatically receive new contributions to the debate in their mailbox, rather than having to keep clicking on a web site – something most people are too busy to do during their working day.

Nonetheless, to ensure that the ideas and suggestions are not lost,

discussions from the conference and the e-mail sessions can be posted on a special web site for future reference.

So, what about the conference itself? The first discussion was held in early September, ahead of the main Montreux event. Participants were invited to provide national perspectives on electronic commerce, and share their ideas and experience in areas such as portal sites, e-commerce strategies, community awareness programmes, and training programmes for small and medium-sized enterprises.

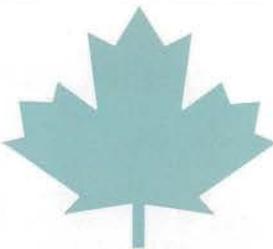
Input ranged across the globe, from the United States to India, Peru to Russia, and included upbeat success stories of national e-commerce portals or computer literacy programmes, and cautionary tales about the problems of trying to do e-business in countries where access to telecom services is neither universal nor cheap.

The second e-mail discussion took place during the forum, and linked e-mail participants from around the world to the live discussions in Montreux.

The final session, in November, focused on identifying how to transform these ideas into action and finding private sector partners who might be interested in helping e-commerce development on a national, regional or international level. ■

References

- ◆ Visit the Montreux conference web site at: <http://www.intracen.org/execforum/>
- ◆ For more on the ITC's work, visit <http://www.intracen.org>



Biodata
Information Technology

Security for the Internet: how firewalls can protect against the growth in computer crime

Internet PCs, telephones and video conferencing systems are under threat. According to researchers Global Reach, 200 million people worldwide surf the web. By the year 2005 there will be one billion Internet users worldwide. As more and more sensitive information is transmitted via data lines, the risk of unauthorised access and data theft is becoming an increasingly dangerous threat to companies and government agencies. Security has emerged as a key issue over the last years. The emergence of e-commerce has not only provided decision-makers with new opportunities but has also increased risk. The enterprise information available to partners, suppliers and even customers will invariably mean that there is a risk of data theft and fraud. Biodata, a dynamic e-security company, offers means of defence against hacking and electronic espionage.

The main threat comes from hackers – both external and internal – who have easy access to tools to crack IT systems to steal, damage or alter data. 'Malware' covers the range of destructive programs that cause security threats. Trojan horses, for instance, masquerade as a valid application, but instead steal passwords from your computer system. They may even introduce viruses on the computer that replicate themselves, use all available memory and bring the system to a halt. Even skilled amateurs can easily break into a network, acquire access rights and destroy, falsify or view data. Research shows that the number of intrusions increases by 20% every year. According to the US Computer Security Institute's most recent annual computer crime survey (executed jointly with the FBI), an estimated 90% of surveyed companies detected cyber attacks in the last 12 months. Last year the US Defence Department repelled more than 22,000 attacks – up 400% in just two years. By massive increases in Internet usage, computer and telecommunications crime – so-called cyber terrorism – is soaring. Biodata, the global leader in network and end-to-end communications security, offers a full portfolio including Internet firewalls and data encryption products for public telecommunications.

Firewalls – which form a network's castle walls – are the first line of defence to keep unauthorised users out. The 1999

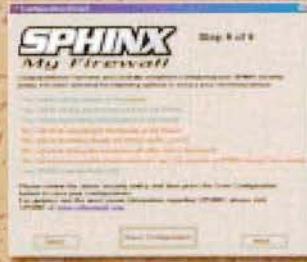
CSI/FBI Computer Crime and Security Survey states that 163 organisations reported financial losses of US\$123,779,000 due to security breaches. 30% of respondents reported system penetration by outsiders. 37% of respondents in 1996, rising to 57% in 1999, list their Internet connection as point of attack. BIGfire+ is Biodata's hardware network firewall solution – serving very much like an outer castle wall. It is suitable for businesses of all sizes as fully compatible, individual versions can be installed separately. Three-level firewalls (packet filter, application gateway and packet filter) are widely accepted as the most effective solution.

Firewalls provide complete network protection by integrating application-level proxies, network circuits and packet filtering into a unique perimeter security architecture. This "full stack" packet inspection technology ensures that the data entering and exiting corporate networks is validated at all levels of the protocol stack. The drive for online banking and e-commerce environments means that corporations are looking to connect business partners and customers securely. The risk of open networks and remote access, not only for employees but also for groups such as suppliers and customers, can place enterprises and banks in a vulnerable position. Demand for security is based largely on awareness. Usually it is probably not until corporations experience data piracy, network downtime or server crashes as a result of a network hack that they start thinking about implementing a security infrastructure.

Easy management of local and remote firewalls is of extreme importance in fast-growing companies with remote offices. Independent of technical specifications, the benefit of a firewall is apparent in its easy-to-use design and manageability. Solutions that are hard to configure are also hard to secure. Firewalls that are easy to manage are also easy to secure. Corporate IT environments with multiple remote sites use a low cost telecommuting program to address a geographically disbursed customer base and support their core business with a mobile workforce. These are the most security conscious organisations because data and electronic information is their primary asset. ■

Hackers be afraid... Be very Afraid.

Next Generation Personal Firewall



Control your Internet Connection

- Specify site access for different users
- Define for your children Internet access to specific sites



Secure your Computer from Internet Attacks

- gives you full individual control
- prevents data theft and manipulation from the Internet
- blocks attacks from the Internet

Define your Internet Access

- Allow internet connections only at defined times
- Allow Internet connections only to defined direction

SPHINX PC Firewall

www.pcfirewall.com



Biodata Information Technology Middle East (L.L.C.)

Dubai World Trade Centre, 22nd Floor,
P.O.Box 9410, Dubai, United Arab Emirates
Tel: +971 4 3313777
Fax: +971 4 3317776

<http://www.biodata.com>



Threats to the information society

TAIZO NAKATOMI, DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INDUSTRY, OECD

The security of information systems is constantly being improved. Unfortunately, so are the skills of the hackers waiting to stage a "cyber attack".

Technological development may have greatly enhanced the security of the information system as a whole. But it has also given potential attackers the chance of far faster penetration into data systems (whether personal, corporate or government) and with wider and deeper effects. What's more, new technology allows attackers to leave few traces behind, all of which makes the criminal investigators' task difficult. Meanwhile, the international network enables almost anyone to

get hold of the tools they need to attack systems.

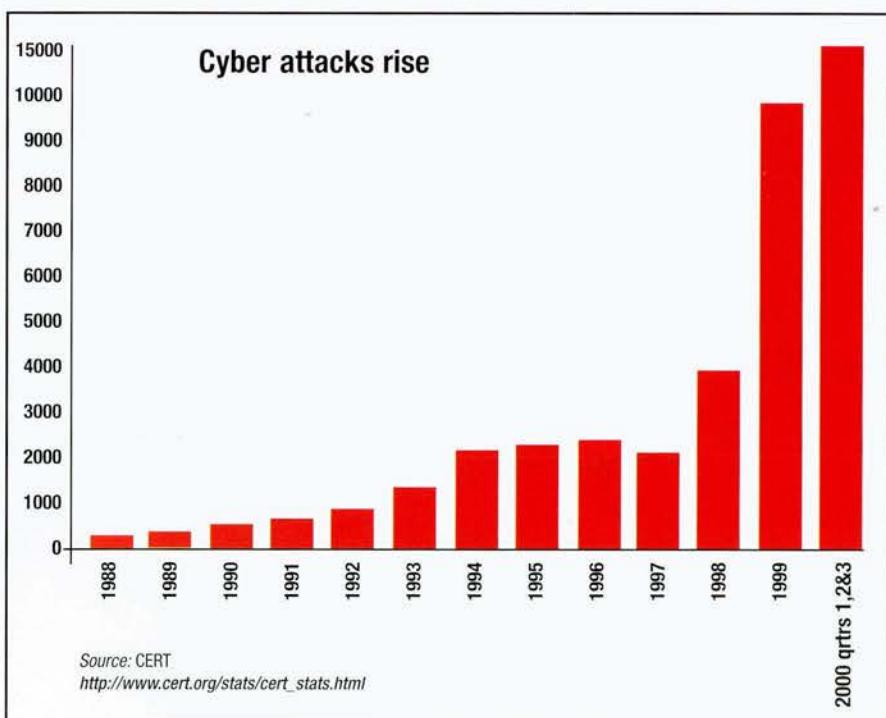
Today's heavier reliance on information systems makes the potential impact of "cyber" attack more significant than ever. And statistics from CERT, a leading centre of Internet security expertise operated by Carnegie Mellon University in the United States, show a rapid increase in reports of incidents affecting security.

Typical examples of 'modern' threats were seen in early 2000,

when two kinds of threats to Internet security emerged. In May 2000, the I Love You e-mail virus seriously affected the world network of e-mail communication, wiping out some hard drives in the process. Earlier, in February 2000, there were the Distributed Denial of Service Attacks (DDoS attacks), which were aimed at a number of well-known electronic commerce web sites.

These DDoS attacks underlined the vulnerability of the present network system. The hacker takes control of a number of systems with weak security levels, mainly on sites that contain information requiring low levels of security, such as a server at a remote-sensing weather station. The hackers covertly install self-operating software (called Denial of Service agents), which sends out a huge number of requests at once, saturating the targeted system's resources.

When systems are interconnected through a network, the weakest systems that are connected to the network are generally the most vulnerable to attack. In effect, these weaker sites determine the overall strength of the network itself. But before jumping to the conclusion that the overall security level of a system has to be improved, a more detailed risk and cost analysis must



be undertaken to decide whether such investments are justified. Issues that are related to increasing security in the network layer

levels at the time, but perhaps more could have been done to educate users in advance. Simple precautions by users (and basic

The I Love You virus was a lesson for everyone in how far and fast even a simple virus can spread via the Internet. Yet simple precautions by users (and basic rules set by managers) could have contained the spread of the virus.

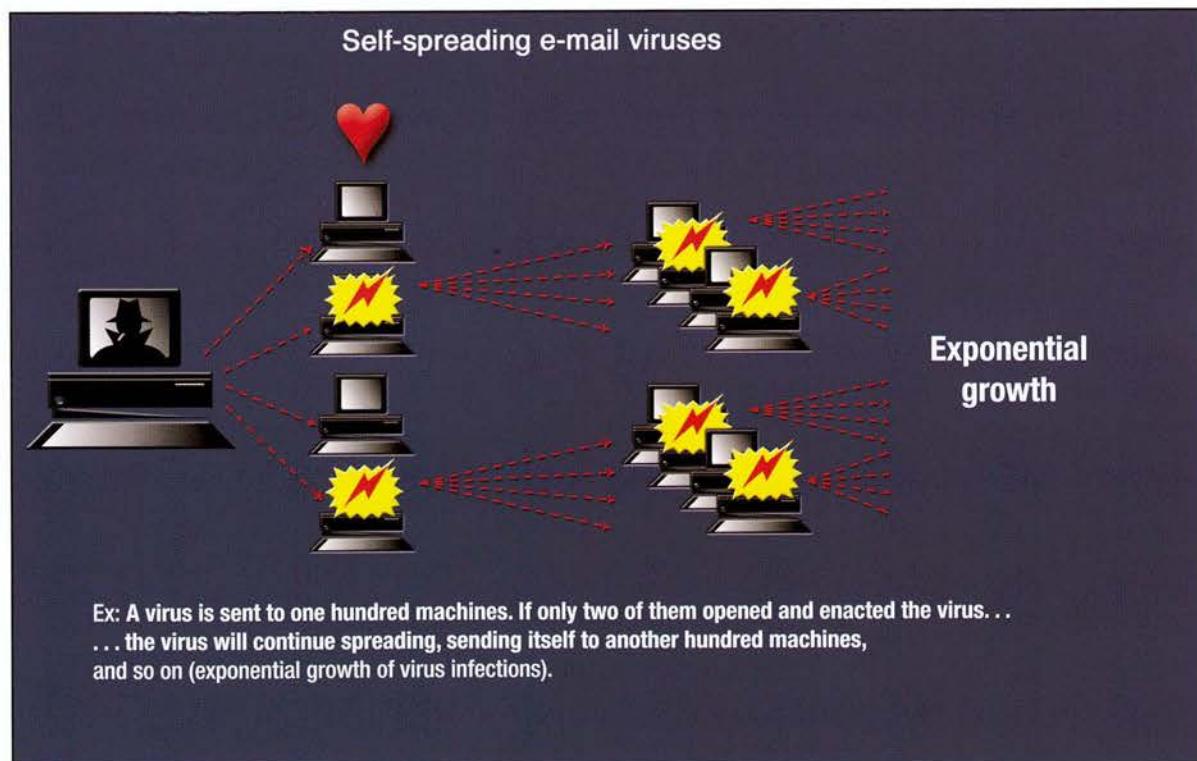
protocols, such as the proposed next generation of Internet Protocol, IPv6, should also be explored.

The I Love You virus was a lesson for everyone in how far and fast even a simple virus can spread via the Internet. It raised awareness

rules set by managers) could have contained the spread of the virus; for example, teaching how to recognise risky file extensions. The I Love You virus was clever, in that recipients were fooled into opening the carrier email because they recognised the name of the sender. This was because it only required

one company or organisation employee to open an e-mail for the virus to enter his or her database of e-mail addresses. It was a grand exercise in deception. By the time managers and gatekeepers knew what was going on and alerted their staff, the virus had already spread around the world. How to stop (innocent) early openers of the message is not that easy.

Another lesson from I Love You is how difficult it is for the criminal law system alone to address international cases, especially when the parties involved might include countries with immature legal systems that are not prepared to handle criminal actions related to electronic commerce. And, like the DDoS



Attacks, it highlighted how difficult it is to track or trace international transmissions of viruses and agents.

What can governments do?

OECD ministers have woken up to the problem, calling in a communiqué in June 2000 for more "confidence in authentication and privacy protection" to be built and for OECD to "engage with the private sector and other stakeholders to develop effective policy responses to urgent Internet security issues such as hacking and viruses". The OECD had already formulated, in 1997, Guidelines on Cryptography to enable safer data transmission and secure

protocols and authentication systems may be widely used.

But the trouble is that the approaches so far have been reactive and do not help to prevent cyber crimes. Just as in traditional commerce, active prevention is more economical and efficient than reactive measures.

In other words, it is time to think hard about how to go beyond traditional governmental "police" efforts if trust in the security of information systems is to be strengthened. Prevention can be achieved mainly by constructing stronger, tighter systems that are

interdisciplinary and international co-ordination. Any effort to improve matters would have to involve a range of players, from business people to leaders of international institutions, user groups, and security experts, including "ethical" hackers. The operative word of such coming together would be co-ordination, rather than control. The OECD, along with its outreach programmes to non-members, could act as a catalyst for enhancing discussions and information sharing, via its conferences, workshops and joint meetings.

One possible framework for building international co-operation on security is the 1992 OECD Guidelines for the

It is time to think hard about how to go beyond traditional governmental "police" efforts if trust in the security of information systems is to be strengthened.

information storage at national and international levels.

Already recent G8 and Council of Europe initiatives on cyber crimes have placed a focus on imposing civil liability and criminal prosecution after security violations. Security in global electronic commerce by its nature highlights the importance of international protocols and procedures. A legal means may have to be found to make those who are responsible for providing security accountable, and to prosecute those who violate security. The international nature of the threat also requires private sector initiatives in applying global solutions in a uniform manner, so that more secure and reliable

relatively free of security holes. Until now, this has been an issue solely for the private sector, especially businesses which supply and use the systems. Governments cannot, of course, control the activities of business, but they may be able to help co-ordinate initiatives on their behalf, as well as for other stakeholders, such as consumers and international organisations. Even information exchange has a valuable role to play, about cyber attacks (perhaps the stories we know are but the tip of the iceberg), known vulnerabilities and experiences of effective countermeasures.

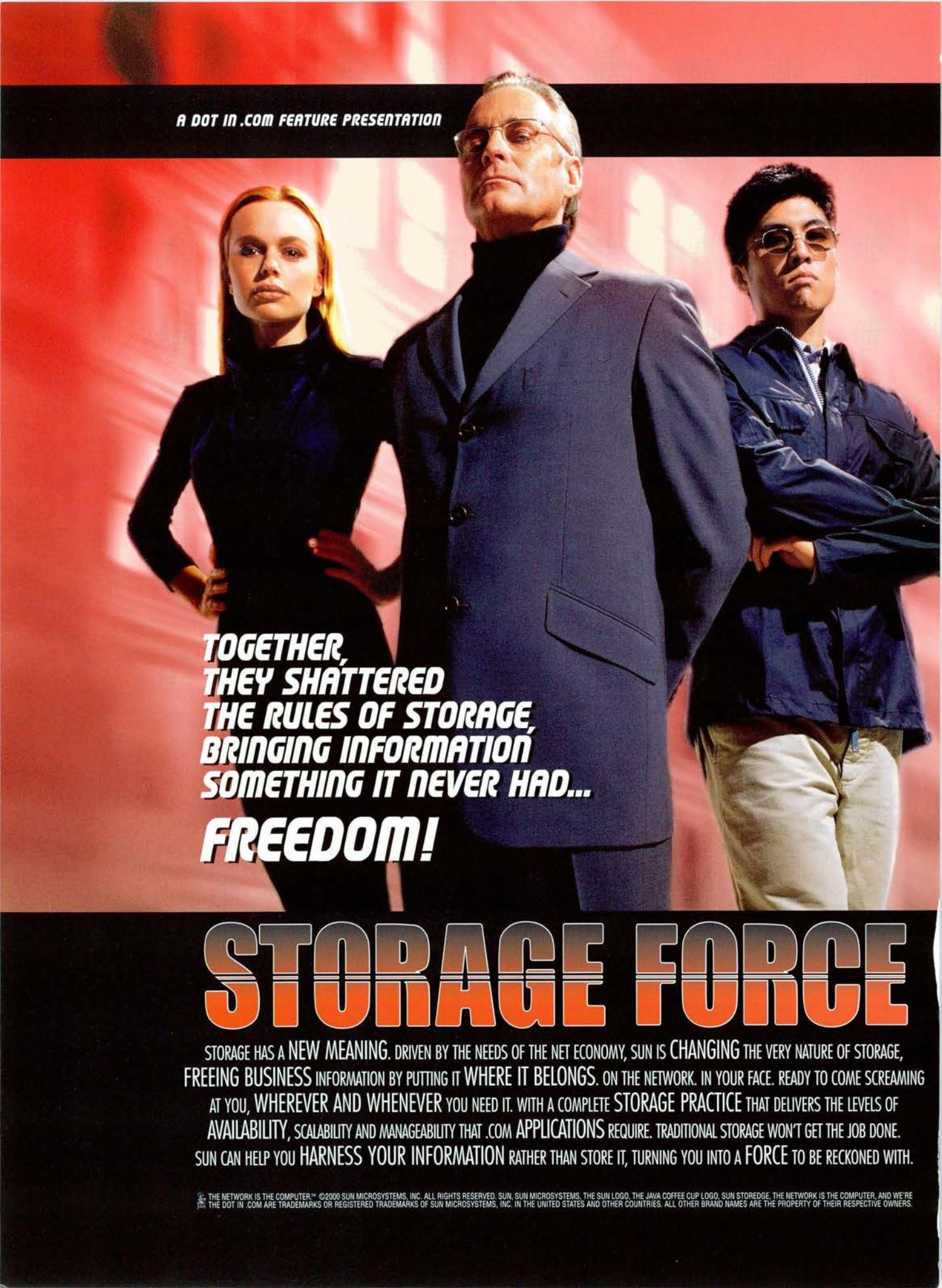
The basic fact is that so far all approaches to global information security suffer from a sheer lack of

Security of Information Systems, which were reviewed in 1997. A new review will be completed by 2002, but there is a question about whether this instrument will be sufficient to address today's security issues. That's how fast today's information world has evolved. We have to act fast and with determination. In the meantime, the advice is simple: think more than twice before you open those e-mails. ■

References

- ◆ For OECD work, consult <http://www.oecd.org/dsti/sti/it/secur/index.htm>
- ◆ Download the OECD Privacy Statement Generator from <http://cs3-hq.oecd.org/scripts/pwv3/pwhome.htm>
- ◆ Visit CERT's web site at <http://www.cert.org/>

A DOT IN .COM FEATURE PRESENTATION



**TOGETHER,
THEY SHATTERED
THE RULES OF STORAGE,
BRINGING INFORMATION
SOMETHING IT NEVER HAD...
*FREEDOM!***

STORAGE FORCE

STORAGE HAS A NEW MEANING. DRIVEN BY THE NEEDS OF THE NET ECONOMY, SUN IS CHANGING THE VERY NATURE OF STORAGE, FREEING BUSINESS INFORMATION BY PUTTING IT WHERE IT BELONGS. ON THE NETWORK. IN YOUR FACE. READY TO COME SCREAMING AT YOU, WHEREVER AND WHENEVER YOU NEED IT. WITH A COMPLETE STORAGE PRACTICE THAT DELIVERS THE LEVELS OF AVAILABILITY, SCALABILITY AND MANAGEABILITY THAT .COM APPLICATIONS REQUIRE. TRADITIONAL STORAGE WON'T GET THE JOB DONE. SUN CAN HELP YOU HARNESS YOUR INFORMATION RATHER THAN STORE IT, TURNING YOU INTO A FORCE TO BE RECKONED WITH.

© THE NETWORK IS THE COMPUTER.™ ©2000 SUN MICROSYSTEMS, INC. ALL RIGHTS RESERVED. SUN, SUN MICROSYSTEMS, THE SUN LOGO, THE JAVA COFFEE CUP LOGO, SUN STOREDGE, THE NETWORK IS THE COMPUTER, AND WE'RE THE DOT IN .COM ARE TRADEMARKS OR REGISTERED TRADEMARKS OF SUN MICROSYSTEMS, INC. IN THE UNITED STATES AND OTHER COUNTRIES. ALL OTHER BRAND NAMES ARE THE PROPERTY OF THEIR RESPECTIVE OWNERS.

CHANGING THE RULES OF STORAGE BY THINKING BEYOND THE BOX.

The Internet age requires a departure from traditional storage. An approach that's open and inclusive of whatever storage or server is part of your network. One that's flexible enough to embrace future growth, yet massively scalable and easy to manage. It's about more than individual boxes. It's about software, servers and storage delivering data services to everyone on the network. Totally available. Totally secure. In the .com world, anything less is, to put it bluntly, just storage.

THE FORCE BEHIND THE FORCE: SUN STOREEDGE T3 ARRAY

The Sun StorEdge™ T3 Array — the essential building block in our “information is always available” approach to storage. Depending on your storage needs, you can start either small or large: from 1/3 of a terabyte all the way up to 88 terabytes in a single solution. The Sun StorEdge T3 Array is perfectly at home as an entry-level storage system, delivering high capacity in a small footprint. When growth hits, buy what you need and let it rip. It's all seamless. And since manageability and serviceability come built into the system, monitoring storage remotely becomes easy. You can predict problems and proactively manage your entire storage network. When you're not worrying about your storage, funny things happen. You manage growth. You focus on your core business. Information is where it belongs. Change becomes your friend.

SAFETY FIRST IN THE .COM AGE.

We brought the concept of distributed computing to the world of servers. And now we're applying that vision to storage, with a suite of management and data protection software engineered for peace of mind in the land of the .com. Wherever data resides — the server, the OS, the network or storage devices — we have the software to manage, monitor and protect every byte. From the Net to the datacenter, information constantly hums. And you have a full view of the entire network, all from a central console. When your mission is to .com the universe, keeping your information available is all the faith you need.

PUT SOME .COM INTO YOUR STORAGE.

No other storage solution can solve the paradox of the Net economy. With Sun as your storage partner, information gets the freedom it deserves and you stay ahead of the competition. Visit www.sun.com/storage to learn more. We're about to give the word "storage" an entirely new definition.

IT'S NOT JUST A BOX, IT'S A BUSINESS.

You're playing for keeps in the .com age, which means you need an experienced storage partner to get you through. Sun is the established force in the world of storage. In fact, every 24 hours, we ship over 100 TB of storage. We're just as deep in services. Our storage practice spans from consulting to remote monitoring. And as the pioneer in open storage APIs, we're partnering with third-party developers to create the storage platform that gives you freedom of choice.

All of which explains why companies ahead of the curve such as eBay, Exodus®, BlueLight.com, Dow Corning and A.B. Watley have joined the 500 other .com customers who trust Sun storage solutions to help them maneuver their businesses through the .com age.



SUN
microsystems

We're the dot in .com™

Fighting hate on the Internet

DR ULRICH SIEBER, PROFESSOR OF CRIMINAL LAW, INFORMATION LAW AND LEGAL DATA PROCESSING, LUDWIG-MAXIMILIANS-UNIVERSITÄT, MÜNICH*

Hate material is spreading on the Internet. The question is what, if anything, can be done about it. What are the technical, legal and strategic options available?

The Internet is wonderfully versatile, which is why everyone is turning to it for information and trade. The trouble is, so are criminals. All sorts of crimes are committed using the net, from straightforward hacking to industrial espionage, sabotage, fraud, infringement of copyright, illegal gambling and trade in narcotics, medicines and armaments. The web is also used to peddle child pornography. And it is a vehicle for the dissemination of hate literature.

Neo-nazi groups have taken advantage of the Internet to spread their doctrine. Their campaigns, which specifically target young people, encourage racist violence and propagate revisionist lies about the Holocaust. Hateful songs and children's games can be downloaded; one game allows the child to assume the role of a concentration camp commandant.

The producers of this material – like others who misuse the Internet – are often not brought to book. This is mainly because the anonymity of the Internet makes it difficult to identify those responsible. If offenders are traced, they are frequently to be found in foreign countries, and prosecuting them requires lengthy co-operation and extradition procedures. In any case, such procedures are pointless if the action for which they are being pursued is legal in their country of

residence. This problem has special relevance to the spread of hate literature coming via the United States, where action of this kind is not merely largely unpunished, but is protected by freedom of expression rights.

So far, nation states wishing to do something about illegal web material being accessed on their territory appear to try either one of two approaches: they attempt to protect themselves against the illegal content by blocking it on their territory, or they try and extend their own criminal jurisdiction to the territory of origin of the

material. The first approach was tried in Germany when the head of CompuServe Deutschland, an Internet company, was required to filter out child pornography coming through to German users from the United States. The second approach was tried recently by France in another widely discussed case, in which a French judge demanded that the US company Yahoo Inc. control access by French users to American sites selling Nazi memorabilia, such as by blocking IP numbers coming from France. And in a new decision of Germany's Federal High Court on 12 December 2000, an Australian citizen was convicted for publishing Holocaust lies and hate speeches on a web site hosted on an Australian server. The person was acting only in Australia, and was arrested while on a visit to Germany.

The object pursued by the law in all these cases is the same: to remove offensive material from the World Wide Web. However justifiable on moral grounds, laws and judgements must take full account of technical realities; rules must at least stand a chance of working if they are to gain respect. Otherwise, those responsible for the offending material would not take the prospect of prosecution seriously and the public – and their political leaders – would feel dissatisfied. What matters is to find truly effective solutions. That means looking closely at the technical



resources available to those working on the Internet, particularly the service providers.

Technical control

For technical control to work, the persons responsible for the web infrastructure must be identified according to their function. Three function types are of interest here: first, there are the network providers, like a telecom company; second, the

secrecy of telecommunications, but would also require total surveillance of the public. Apart from being quite inconceivable in a democratic state founded on the rule of law, it probably would not work anyway.

Besides prosecution of the authors of illegal contents (the so-called content providers), effective solutions depend therefore on the host service providers, who may unwittingly be storing illegal

Hateful songs and children's games can be downloaded via the Internet; one game allows the child to assume the role of a concentration camp commandant.

access providers (Compuserve Deutschland was acting as an access provider in the German case); and third, the host service providers that operate the servers and stores the data, such as Yahoo.

It is quite impossible for the first two, the network and access providers, to control and block content sent over the Internet, which is why they are on the whole exempt from criminal responsibility under the e-commerce directive of the EU and most European national laws. This is because of the large volume of data carried on the Internet, the encryption of data, and the impossibility of real-time control of the material transmitted.

Comprehensive control would also be undesirable from the legal/political point of view: the same Internet nodes are used to transfer not only public information, but also private mail and other confidential data. Filtering would therefore only provide an effective solution if it could control everything and if encryption were forbidden. This would not only amount to a massive violation of the

material over long periods. The host service providers cannot control all stored data. However, they may be required, upon discovering or more

especially being told (often by users) about the presence of the illegal material, to check the data in question and, if it violates the law, to remove it or make it inaccessible. This, experts agree, is the most effective instrument in the fight against illegal material on the web. Thus, under European Union regulations (article 15 paragraph 1 of the e-commerce directives), the host service providers are not required to take active measures to control the material, as this would be hard to implement, but only to accept responsibility once they know they are providing illegal data.

Extending the law abroad

But how can host service and content providers observe not only their own country's laws, but also those of all the countries in which the material they

Sex, lies and phone bills

Imaginative fraudsters have been quick to use the web to turn a dishonest penny. In one case investigated by the US Federal Trade Commission (FTC), consumers were duped into making costly international telephone calls in a bid to ward off bills for goods they had not actually ordered. The scammers sent thousands of consumers an e-mail message thanking them for their order for goods priced at between \$250 and \$899 dollars, and informing them that their credit cards would be billed accordingly. The recipients were further perplexed when they found that the return address on the e-mail did not work. So they rushed to telephone the customer complaint number given in the e-mail. But the calls

went through to a number in Dominica, West Indies, and connected up to an adult entertainment audiotext service. The consumers later received bills for costly calls to Dominica. The owner of the phone number would simply recoup part of the call charge. The FTC acted on consumers' complaints to block money for the calls being sent to Dominica, but was unable to identify immediately those responsible.

- ◆ For more information on Internet scams and how the FTC is combating them, visit their web site at <http://www.ftc.gov>
- ◆ Visit the OECD's online security and privacy web site at <http://www.oecd.org/dsti/sti/it/secur/>

supply may be accessed? From a technical standpoint, it would be possible – if in a crude and limited way – for the host service provider to apply blocking measures, since at present around two thirds of Internet users can be located by their IP (Internet Protocol) numbers. However, users can easily circumvent these identification measures (by resorting to a suitable international access provider, such as AOL or IBM, which does not differentiate its members by country IPs, or by using a foreign proxy server to disguise origin).

supplier, be subject to stringent obligations to respect the law of the state in which its statement of intent, services, or goods have been received. Nazi memorabilia coming from abroad, or money sent for payment, can also be seized, helping enforcement.

The basic point is that national laws can in general only be applied to the World Wide Web in a limited way. Consequently, if certain sites – such as markets for Nazi insignia – are protected in the United States by freedom of expression and are illegal

goodwill, in particular when it comes to enforcement and intervention.

Another approach would be for internationally active online services, Internet providers, search engines, and e-businesses to take a lead by drawing up “codes of conduct” that would be recognised throughout the world. The guarantee of freedom of expression in the United States does not necessarily prevent an enterprise from barring materials it regards as morally reprehensible, particularly if those materials are illegal in other major democratic countries.

International businesses could not only ban hate material on the Internet, but also help the prosecuting authorities in tracing those responsible for Internet crime.

National laws can in general only be applied to the World Wide Web in a limited way. The fight against illegal material on the Internet must concentrate on international co-operation and other solutions.

There is also the complication of knowing the legislation of all the countries (and sub-sets of countries) from which the material they offer can be accessed. For instance, for blocking to work, the Chinese would not be given access to political opinion pages, while citizens of some Islamic states would not get advertisements for alcoholic beverages. Above all, an “extraterritorial application” of criminal law cannot be enforced in practice if the prosecuted actions by one state are legal in the other state.

One possible way of apportioning responsibility might be to focus on e-business suppliers. When these are involved in a transaction with a foreign client, they are not confronted with the legislation of all web user countries and their sensitivities, but with the specific legislation of their client. In other words, the purveyors of Nazi memorabilia to clients in France or Germany may, unlike the WWW

in Germany, then in free democracies it is only possible in exceptional and specific circumstances to prevent this content from being hosted on U.S. servers and accessed by European users. As a result, the fight against illegal material on the Internet must concentrate on international co-operation and other non-legalistic solutions.

Co-operation

However, harmonising legal provisions with the aim of halting the spread of hate material on the Internet would be difficult, given the US freedom of expression rights. Determined Europeans could try to persuade their American friends of the negative effects the spread of Nazi propaganda and hate literature is having in Europe, particularly on the young. Compromise regarding the harmonisation of laws would be required from all sides. This would demand considerable co-operation and

Education of Internet users is also important. More pages should be provided so that schoolchildren browsing for information on the Holocaust should not be confronted just with sites propagating the lies of Nazi groups, nor indeed the pages of unhelpful anti-Nazi sites, as they often do today, but objective, educational material as well. In this regard initiatives like the German government's web school project, “Schulen ans Netz”, can play an important role in helping children not only to find what they want, but become immune to expressions of hatred as well. ■

References

- ◆ Sieber, U., “Verantwortlichkeit im Internet”, C. H. Beck eds, Munich 1999.
- ◆ For related online publications from the same author, visit www.jura.unimuenchen.de/sieber/
- * Professor Sieber was the defence lawyer of the CEO of CompuServe Germany in his acquittal by the Landgericht Munich.

Whence the web?

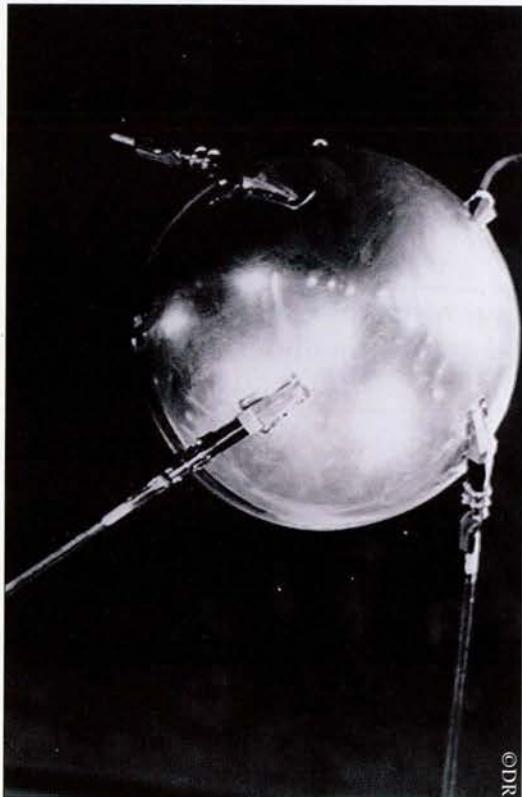
JAMES GILLIES, EUROPEAN LABORATORY FOR PARTICLE PHYSICS (CERN), SWITZERLAND

Was the World Wide Web an invention of the US military, or did it come out of Microsoft? The answer, perhaps surprisingly, is more scientific than that, although both defence and business had their parts to play.

The World Wide Web may have apparently burst fully-formed onto the world stage in the mid-1990s, but it was in fact the result of a gradual development process dating back half a century. Credit for actually inventing the web belongs to British computer scientist, Tim Berners-Lee, in 1989 at the European Laboratory for Particle Physics, CERN, in Geneva, Switzerland.

It emerged from its academic ghetto onto the desktops of ordinary Macintosh and PC users four years later when the National Center for Supercomputing Applications, NCSA, at the University of Illinois, released its Mosaic browser, giving virtually all computer users easy access to sites and information on a network. The World Wide Web (since shortened to www, the commonest prefix of Internet addresses) rapidly became a household name, cyber-cafés sprang up in cities around the world, and Internet start-ups began to redefine the rules of commerce. It seemed like a revolution, but the real revolution had started long before.

The web's roots go back as far as the 1940s, when visionary US engineer, Vannevar Bush, dreamt of a "future device for individual use, which is a sort of mechanised private file and



Sputnik in "real" space

The political impetus for the Web came as a direct consequence of the 1957 launch of the Russian Sputnik. America's first satellite went up just a few months later, but President Eisenhower still declared that never again would the United States be taken off guard.

library". He named it the memex, and went on to describe "new forms of encyclopaedias, ready made with associative trails running through them, ready to be dropped into the memex". What Mr Bush had in fact described was hypertext, which links sites and pages together, although he didn't call it that. Along with personal computing and the Internet, hypertext is an essential ingredient of the web.

But in the 1940s, computers were in their infancy and networks non-existent. Mr Bush's dream lay dormant until the 1960s when the first networks were designed, the first hypertext systems built, and the first mouse was demonstrated. Hypertext acquired its name early on in the decade thanks to Ted Nelson, whose conceptual Xanadu system, in which information would be stored in the form of linked text, inspires workers in the field to this day. But it is to Doug Engelbart that we owe the first working hypertext system, famously demonstrated at a U.S. computer conference in 1968, complete with mouse, graphical display, and all the trappings of a modern desktop computer.

For the final ingredient – communication – computer networks owe their origins to two very differently motivated people.

Birth of the web

science and technology

Paul Baran in the US saw his country and the Soviet Union pointing huge nuclear arsenals at each other, while both had vulnerable communications networks. He believed this raised the incentive for one side or the other to attack, since whoever made the "first strike" would wipe out his adversary's communications system, making the country more vulnerable.

If communications systems were made robust enough to survive a first strike, Mr Baran reasoned, the world would be a safer place. Donald Davies in England, on the other hand, simply wanted to find an efficient way for computers to talk to each other. Both

guard by the Soviet Union, and he established the Advanced Research Projects Agency (ARPA) to make sure that the United States stayed one step ahead. One of ARPA's creations was a robust computer network spanning the United States. This was the ARPANET, precursor of the Internet.

By the 1980s, Mr Engelbart's hypertext



Photo: Robert Cailliau

Tim Berners-Lee demonstrating the Web at the Hypertext '91 conference in San Antonio, Texas. His paper was rejected, but he was allowed to show the web

In 1989, Mr Berners-Lee came up with a proposal for a "Distributed Information Management System" for CERN and its collaborating institutes. His boss was sufficiently impressed to pencil it in as "vague, but exciting".

Mr Baran and Mr Davies separately came up with the concept of packet-switching. This divides information up into small address-bearing chunks that are sent out onto the network. The chunks can follow different routes to get to their destination, and when they arrive they are reassembled. It's a bit like sending a letter using several postcards in different mailbags – it may be inefficient for human communication, but it is ideal for machines and is how all computers talk to each other today.

Paul Baran and Donald Davies had laid the technological cornerstone of the Internet, but the political impetus had come earlier as a direct consequence of the 1957 launch of the Russian Sputnik. America's first satellite went up just a few months later, but few now remember that. President Eisenhower declared that never again would the United States be taken off

ideas had entered the mainstream, being developed first at Xerox's Palo Alto Research Center and then commercialised by Apple in the form of the Macintosh. The main ingredients of the World Wide Web were all in place. All that remained was to complete the recipe. Brian Carpenter, at the time head of CERN networking, remembers, "We knew there would be a killer-application, but we didn't know what it would be" until the World Wide Web was born.

CERN was the natural place for that final touch to be made. In the early 1980s the laboratory, already host to some of the world's largest and most widespread scientific collaborations, was planning a big jump. Work from hundreds of scientists around the world was coming together to build experiments for the laboratory's next high-energy big particle accelerator, the Large Electron-Positron collider, LEP.

New ways of keeping in touch and sharing data were desperately needed.

Tim Berners-Lee was to provide the solution. He arrived at CERN in 1984 to work on networking LEP's computers. One of the things that struck him was how inefficient it was that information on one computer at CERN could not be accessed by another.

At the same time a Belgian colleague, Robert Cailliau, was thinking along similar lines. While Mr Berners-Lee dreamed of putting hypertext on the Internet, Mr Cailliau wanted to build a hypertext system for CERN's Macintosh networks, based on Apple's own hypertext system, hypercard. Their collaboration was to change the face of the Internet forever.

In 1989, Mr Berners-Lee came up with a proposal for a "Distributed

Information Management System" for CERN and its collaborating institutes. It was a document high on ideas, but low on practical details. Still, his boss, Mike Sendall, was sufficiently impressed to pencil it in as "vague, but exciting". A year later the World Wide Web was born, and even though in the beginning the web only stretched from one office to the next, its global intentions were stated.

By Christmas 1990, Mr Berners-Lee had written programmes for the first web server and browser. This browser, which is the tool that finds and hauls in information from the web remains the state-of-the-art, but it only worked on rare computers called NeXT cubes, so the web's range was initially limited. The following year Nicola Pellow, a British student at CERN, wrote a programme for a simple browser that could be used on any computer, and the world's particle physics community began to take notice. Mr Berners-Lee embarked on a world tour of particle physics labs, touting the new web software. Soon physicists in Hamburg were consulting online phone books at Stanford in California while scientists at CERN were looking up documentation at the United Kingdom's Rutherford Appleton Laboratory.

The web finally took on its worldwide dimension in 1993 when CERN issued a statement relinquishing intellectual property rights and placing web software in the public domain, allowing anyone to download web software over the Internet and work on it. It was a controversial move, but it meant that anyone was free to contribute to (and benefit from) the web's development.

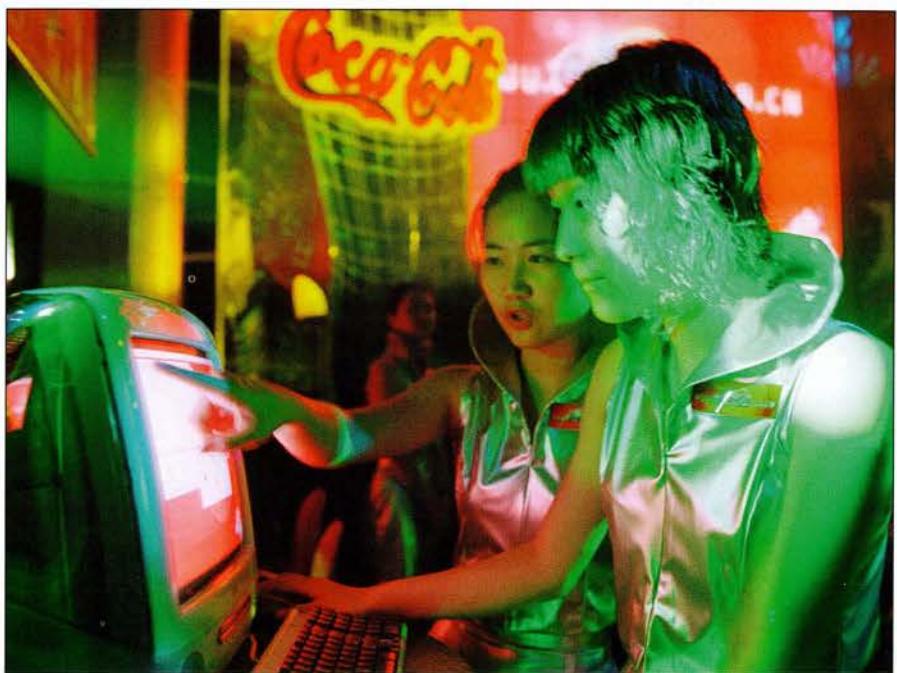
Sophisticated browsers began to appear, none more influential than NCSA's Mosaic, the first sophisticated browser for UNIX, Macintosh or Microsoft windows systems that was easy to install. Copies were soon being downloaded at the rate of thousands per day.

In 1994 stewardship of the web passed to the World Wide Web Consortium, W3C, hosted by the French National Institute for Research in Computer Science and Control (INRIA), and the Massachusetts Institute of Technology (MIT), leaving CERN to get on with its core task of fundamental research. Mr Berners-Lee moved to MIT to become W3C's director, where his role remains today much as it was then – trying to ensure that the web remains free and open, and steering it towards a realisation of his original dream.

Merry XML

For all its utility, the Web of today is not as powerful as the one Tim Berners-Lee had in mind in 1989. He didn't just foresee a single Web, but multiple interconnected ones that would enable users to input as well as download information, creating new pages linked to the one they already had open in one seamless operation. Putting content up would be simpler, enabling people to create shared information spaces for their families, and companies to create workspaces, without worrying about compatibility of programmes, servers, or browsers.

That dream may be brought closer by a new computer language for structuring content, called XML, and a sophisticated word recognition concept which Mr. Berners-Lee dubbed the "semantic Web". XML, or extensible mark-up language, will allow companies to customise their



The real thing in 2001

Photo: ©Reuters

Birth of the Web

science and technology

browsers, and bring an end to the "best seen with browser X" notices that feature on so many pages today. The semantic web idea will "teach" computers a more sophisticated use of language that will make finding and trusting information simpler for the user. It will work by adding computer-understandable meta data normally invisible to the user, including information allowing users to judge the reliability of the source of a web page. But it will also include broader language skills closer to the human use of language. This would allow, for example, a seller advertising "a pink car" in Boston to link up with someone wanting to buy "a rose-coloured automobile" in Cambridge, by telling the search engine that pink

and rose are the same colour and that automobiles and cars are the same thing. The result will be to connect seller and buyer more precisely and quickly than current systems allow.

The Amaya browser is W3C's testbed and has all these features. And in keeping with the spirit of the World Wide Web, it can be downloaded for free from <http://www.w3.org/>. Amaya gives a flavour of Mr Berners-Lee's dream, and a foretaste of the web of tomorrow.

The web is an outstanding example of how basic research can generate progress in unforeseeable and broadly beneficial ways. Perhaps the web was waiting to happen as technology was

being evolved in several different places, but it was the demands of global particle physics research that made CERN the driving force.

And as for Microsoft? Well if you dig deeply enough in early versions of the Seattle company's Explorer browser, you'll find mention of a licence agreement with NCSA, the makers of Mosaic. One can only wonder how worldwide the web would be now had Microsoft somehow ignored W3C compatibility and gone on to develop the technology themselves. ■

Reference

- ◆ James Gillies and Robert Cailliau, *How the Web was Born*, Oxford University Press, September 2000.



ANNOUNCING

OECD  OCDE

FORUM 2001

14-16 May 2001
Cité des Sciences et de l'Industrie, Paris

Sustainable Development and the New Economy

Second International Conference and Knowledge Fair
(In Parallel to the Annual OECD Ministerial Meeting)

OECD Forum 2001 is a major international public conference bringing together ministers, heads of international organisations, and representatives of business, labour and civil society. It takes place on 14 to 16 May 2001 at the Cité des Sciences et de l'Industrie in Paris. It will be held in conjunction with the annual summit meeting of the OECD Ministerial Council.

**25% discount for subscribers
of the OECD Observer**

www.oecd.org/forum2001/

Email: oecdforum@touch-stone.co.uk
Telephone: +44 (0)20 8332 0044
Fax: +44 (0)20 8332 0874

Today we have to conduct and create policy in a much more open, transparent and accountable way. We live in a world where civil society wants to be heard from...we need to embark on the kind of experiment that OECD Forum represents.

Shirley Williams, House of Lords, UK, at the opening of Forum 2000



**FIRST
ATLANTIC
COMMERCE**

First Atlantic Commerce – leaders in offshore e-commerce

Internet merchants are the first generation of merchants to have the option to choose the jurisdiction in which their transactions are processed and settled. This includes the option of conducting online business offshore.

As with any type of business, choosing an offshore jurisdiction for e-commerce can depend on a number of factors. Regardless of your business goals and strategies, you want to find a jurisdiction with a strong and reputable regulatory, legal and e-commerce framework; advanced telecommunications; political and economic stability; and professional services to properly address your requirements.

Offshore jurisdictions are leading the way in establishing e-commerce legislation. Bermuda created the world's first Ministry of e-commerce (known as the Ministry of Telecommunications and Electronic Commerce), and was second only to Singapore in passing e-commerce legislation. Many offshore centres are establishing sound, approved practices for online business, so that Internet merchants can take advantage of the benefits of doing business on the Internet, in a safe environment.

E-commerce merchants are drawn to Bermuda because of the island's infrastructure, e-commerce service providers and offshore benefits. Offshore jurisdictions like Bermuda also often fall under different regions for credit card associations, thus having different, sometimes more attractive, rules and regulations.

First Atlantic Commerce was one of only three companies in Bermuda to pass private legislation for e-commerce, which goes beyond the parameters of existing public legislation. The First Atlantic Commerce Act 1999 ensures enhanced services and security for e-commerce merchants and their customers, and features a unique legal vehicle, called a 'VirtualCorp', to facilitate funds processing for international merchants. The Act also ensures the protection of customer data, consistent with EU directives, which ensures personal data obtained from a client is used only for the purposes agreed to by that client.

As an offshore payment gateway, First Atlantic Commerce offers consultative and implementation services for banks located in

other respected offshore jurisdictions, which are interested in offering e-commerce services to their clients. The company's understanding of credit card rules and banking requirements makes it fast and easy for banks to offer complete payment services to their customers.

For the banks' merchants, the company has developed cGate® and cGate® Secure, an FDMS qualified, secure and customisable credit card/debit card transaction processing gateway. cGate® Secure features the highest level of encryption available, providing merchants with the security and service they need, and their customers with the peace of mind that their information is secure.

E-commerce is a global industry, and merchants need to consider the impact of having customers around the world who need services, information, marketing, technical support and other activities that are easy to understand and fit comfortably into their culture. E-commerce requires a major shift in business practices.

First Atlantic Commerce features globalised solutions that address these new considerations. The company's multi-currency platform allows merchants to conduct business in their choice of currency. First Atlantic Commerce also offers unique multiple jurisdiction settlement capabilities, which is only possible from an offshore location.

Partnerships in various regions also open a number of opportunities for First Atlantic Commerce clients. First Atlantic Commerce has partnered with industry leaders such as First Data Merchant Services, VISA® and eFalcon to leverage synergies and offer the best solutions available online.

Being located in a respected offshore jurisdiction has positioned First Atlantic Commerce to become a leader in offshore e-commerce. We work with our clients to find a solution that works best for their needs. Our expertise can help to make your online business a global success. To contact us, visit our web site at www.firstatlanticcommerce.com.

First Atlantic Commerce. Access an ocean of innovation. ■

Navigating between Scylla and Charybdis

ANDREA GOLDSTEIN AND DAVID O'CONNOR, OECD DEVELOPMENT CENTRE

Will e-commerce help solve problems that have dogged developing countries for decades, or will a widening digital divide entrench them still further in a vicious circle of poverty?

The mythical Greek hero Odysseus had to use all his intelligence to navigate between Scylla, a rock monster whose six heads plucked hapless sailors to their doom, and the fatal whirlpool Charybdis in his odyssey across the Mediterranean more than 2,000 years ago.

Today's policymakers may be equipped with more up to date tools, but they face just as daunting a task when it comes to measuring the likely effect of electronic commerce on developing countries. The challenge now is to avoid the Scylla of technological pessimism – seeing an inevitably widening “digital divide” between industrialised and developing countries – without being sucked into the Charybdis of exaggerated claims about the Internet's potential to resolve a host of development problems which have so far proved intractable.

The uneven spread of information technology (IT) worldwide risks reinforcing existing income and wealth inequalities within and between countries, but what remains unclear is

whether the “digital opportunities” stressed by optimists will ever amount to more than a handful of anecdotes. While it is clear that e-commerce is making it easier for artisans, musicians and other artists in developing countries to access business-to-consumer world markets, cutting out layers of middlemen and improving the creators' bargaining power, the Internet is so new that there is little historical evidence on which to base projections of future trends.

Globalisation can potentially help reduce the digital divide by encouraging the freer movement of technology across borders, from innovator to adopter countries. The cost of IT hardware has fallen significantly in recent years, offering poor countries and poor people access to markets, information, and other resources that would otherwise have been inaccessible. Developing countries, however, still have a scarcity of IT-related infrastructure, hardware and software investment, and know-how. IT experts are few, the allure of better-paid job

opportunities in OECD countries looms large, and the communications infrastructure and regulatory environment vital for easy, affordable Internet access are often lacking.

Any analysis of the potential of e-commerce in developing countries has to be guided by a realistic assessment of two key elements: the prospects and timeframe for improving Internet access and affordability in low-income countries (no Internet, no e-commerce); and the major likely sources of demand for e-commerce transactions and web-based services in developing countries. At the same time, one has to consider the need to overcome infrastructure bottlenecks in related areas like electricity and transport, and the governance aspects of e-commerce, including consumer protection, security of transactions, privacy of records, and intellectual property.

Entrepreneurs in developing countries face huge obstacles in penetrating world markets and in expanding or diversifying sales in their domestic markets, such as limited information about market opportunities, limited access to financing, and limited capacity to satisfy the requirements of overseas customers when it comes to quality and cost.

These problems are not new. The challenge is how to use





FOR SECURE
ONLINE
PAYMENT
SOLUTIONS,
THE BEST
CHOICE LIES
OFFSHORE.

E-commerce expertise. First Atlantic Commerce is a Bermuda-based e-commerce provider, specialising in consulting services to acquiring banks for Internet enablement, and secure payment solutions for their online merchants.

Industry knowledge. First Atlantic Commerce understands e-commerce. We offer a wealth of industry knowledge, and a thorough understanding of credit card regulations and best practices.

A higher level of security. First Atlantic Commerce connects merchants to major international credit card processors and a long list of globally recognised banks, ensuring fast and secure transaction processing. cGate® and cGate® Secure are custom software systems, developed by First Atlantic Commerce using the latest technology and highest levels of encryption.

Offshore choices. First Atlantic Commerce understands the offshore environment. We work with respected partners in reputable jurisdictions, offering a number of offshore choices. Bermuda was also one of the first countries in the world to enact public e-commerce legislation.

Global solutions. First Atlantic Commerce opens a world of opportunity to banks and web-based business.

First Atlantic Commerce. Access an ocean of innovation

www.firstatlanticcommerce.com



the Internet and e-commerce to remove, or at least to lower, these hurdles, as well as to overcome the new obstacles posed by new technology itself.

Building trust can be a problem for developing country businesses, but is vital in e-commerce because of the enormous security challenge of online deals.

The lack of a critical mass of local users may limit network benefits to developing country entrepreneurs, for example, since the technology only becomes really useful when enough prospective customers and suppliers and enough locally relevant content are accessible online. But high access costs are a serious deterrent to wider adoption of the Internet in many countries. Telecommunications monopolies are one contributing factor to high costs, but low telecoms network density in rural areas can also prevent connection to the Internet via a local phone call, pushing up the price. The cost problem may explain why the Internet remains simply a medium for providing e-mail services in developing countries to a far greater extent than in OECD countries. E-mail is cheaper than other Internet options because it requires minimum time online, but while it may provide communication cost savings and other benefits to users, it is clearly an under-utilisation of the web's potential.

Developing country entrepreneurs also face the problem of building virtual trust. All international trade is based on trust to some degree, but this is particularly true of e-commerce because of the enormous security challenges posed by online transactions, the low entry costs, and the opportunities opened up for new,

unknown suppliers. Reputation can matter even more in the world of e-commerce than in the bricks-and-mortar world, especially when transactions cross borders and raise

thorny questions of legal jurisdiction. Geography is not supposed to matter in the virtual world but it still does. Individual Internet entrepreneurs, however trustworthy, may still struggle to reassure customers if the image of their country is one of weak respect for the law.

Various initiatives, both private and public, are afoot to establish a firmer

basis for trust online – from real-time peer rating systems to voluntary codes of conduct to public accreditation schemes. It would be premature to pronounce any one approach as preferable and in any case sector-specific research is needed to address the concerns of different groups of entrepreneurs in developing countries. Governments need to work towards creating a climate of trust that makes it possible for agents to conduct business online without the need for face-to-face contact or a long track record of prior dealings. Beyond certain minimum standards of transparency, impartiality and efficiency, a legal and judicial framework for e-commerce needs to address specific concerns of protection of privacy, security and cybercrime, intellectual property, and treatment of digital signatures. Until

The best buy / sell recommendations in the Market

EFIRST GLOBAL 
The Thinking Investor's Brokerage House
Tel.: 7895800 • www.efirstglobal.co.in



A photograph showing a woman in a pink sari walking past a small shop in a rural setting. The shop has a sign that reads "The best buy / sell recommendations in the Market" and "EFIRST GLOBAL". The shop appears to be a brokerage house. In the background, there are other people and a body of water.

One world in practice

the key policy elements are in place to the satisfaction of potential OECD e-commerce partners, industry self-regulation and private initiatives are likely to take precedence.

Official development assistance (ODA) from the Group of Eight leading industrial countries, and other members of the OECD's development assistance committee (DAC) may be able to leverage private investments in the expansion of telecom and Internet infrastructure in developing countries. One possibility would be to lease spare capacity on privately launched low-earth-orbiting satellites during their low-traffic transit over poor countries to provide the latter with bandwidth at affordable costs. ODA assistance in capacity building in the areas of legal and regulatory issues can also help equip developing countries to play a full part in negotiations and discussions that are shaping global rules and protocols governing e-commerce.

The G8 is already committed to preventing the digital divide from widening further. At their annual summit in Okinawa in July, the G8 leaders highlighted this problem and adopted the Okinawa Charter on Global Information Society. The Charter called for a solid framework of IT-related policies and action to provide a basis for promoting social and economic opportunities worldwide and creating a truly global information society.

Public-private venture capital for developing country dot.coms is already in the works, with the recently announced Softbank/World Bank multi-million dollar fund. On a more modest scale, other initiatives linking

Grassroots connections

One possible way to bridge the digital divide in the developing world is to start small at grassroots level and build up gradually. Several initiatives of this kind are already in place. The World Bank's private sector arm, the International Finance Corporation (IFC), is joining with Japan-based global Internet company, Softbank, to spawn start-up Internet companies in up to 100 developing countries. Softbank Emerging Markets (SBEM), with an initial investment of some \$200 million, aims to replicate e-business models that have already been successful in emerging markets. SBEM will invest seed money in new Internet enterprises and provide technological, legal and management support to help turn ideas into solid businesses, working with global industry leaders and local partners. Softbank has already set up a fund with IFC involvement for China and Latin America.

information technology with finance like the Grameen mobile-phone-cum-bank network look promising, though they are still in early days. The approach to providing low-cost Internet access to the rural poor of Africa, Asia and Latin America will almost certainly be radically different from that followed in the OECD Member countries. Experimentation is needed and is happening throughout the developing world.

The main initiative to emerge from Okinawa was the establishment of the dot.force to provide a high-level forum for public and private sector leaders to

On an even smaller scale, Bangladesh's microcredit lending institution, Grameen Bank, has set up a new venture, Grameen Communications, to bring the web to the country's poorest rural areas. The village computer and Internet programme (VCIP) provides services for isolated regions. Computers can provide information in areas of immediate use to rural populations, such as product prices in the wider market for farmers and business, as well as information about health, education and agriculture. Grameen Phone has meanwhile brought phone services to rural villages for the first time by providing mobile phones to be operated on a commercial basis by village "phone ladies". ■

References

- ◆ Visit Softbank's web site at <http://www.softbank.com>
- ◆ Visit the IFC website at <http://www.ifc.org>
- ◆ Visit the Grameen web site at <http://www.grameen.org>

discuss ways to bridge the digital divide. The dot.force is preparing an assessment of what is being done and what needs to be done to ensure that the benefits of the Internet extend even to the poorest countries and will report to the 2001 G8 Summit in Genoa. One thing is certain: the Herculean task of democratising access to the Internet and making its potential real for poor people in developing countries is only just beginning. ■

Reference

- ◆ Visit the Development Centre's web site at www.oecd.org/dev

What companies need

MARIA LIVANOS CATTUI, SECRETARY GENERAL, INTERNATIONAL CHAMBER OF COMMERCE

Businesses have a key role to play in bringing e-commerce to developing countries. But the challenges are great.

Whenever business leaders from the developing world meet these days, two objectives overshadow all else: attracting foreign investment to their countries, and realising the boundless potential of electronic commerce.

There are more Internet hosts in Manhattan than in the whole of Africa. The overwhelming majority of the world's Internet users live in industrialised countries and less than 1% in the world's poorest countries.

At recent regional conferences of the International Chamber of Commerce (ICC), executives from member companies in developing countries saw the two objectives as interlinked.

They are convinced that the full range of Internet-based business and information possibilities will be central to economic growth, employment, expansion of trade and improved social conditions. However, e-commerce cannot flourish in a vacuum. Without wealth-generating foreign direct investment and infrastructure development, it will have trouble taking root.

Whether from Africa, Asia, Latin America or the Arab world, senior executives attending ICC regional

conferences in the last quarter of 2000 were eager to exploit the Internet's promise of access to knowledge and markets on an unprecedented scale.

Especially for those huge regions that share common languages – the Arab

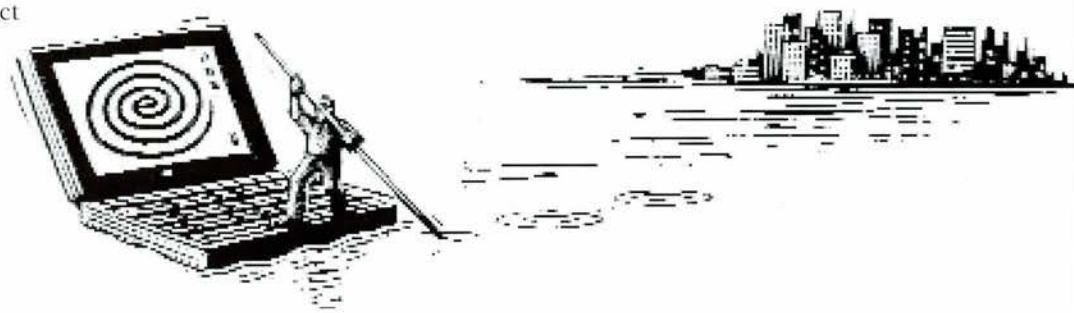
world and much of Latin America – the Internet can be the great unifier and creator of business opportunities and hence of higher living standards. Business in developing countries rightly sees information and communications technology (ICT) as a chance to compete on terms of equality in world markets.

And yet as long as the digital divide yawns, the web will be worldwide in name only. There are more Internet

hosts in Manhattan than in the whole of Africa. The overwhelming majority of the world's Internet users live in industrialised countries and less than 1% in the world's poorest countries.

But generalisations can be misleading and the numbers will change. The extent of Internet access varies from country to country. According to some estimates, the number of Internet users in the Asia-Pacific region is expected to jump from 73 million in 2000 to 233 million in 2005. At present rates of growth, China could have the world's biggest online population within 10 years.

However, most statistics show that the gap between the haves and the have-nots is growing. Because a widening digital divide will heighten the risk of the world's poorest nations being left out of economic globalisation, G8 governments at their Okinawa summit last July made bridging it a priority.



Many United Nations agencies have engaged in initiatives designed to get poorer countries online. The International Telecommunications Union (ITU), which is able to provide solid backing on a technical level, has established an e-business infrastructure programme in more than 80 countries.

computers linked to adequate telecommunications networks. Basic infrastructures, like an effective education system, must be in place if electronic commerce is to flourish and to be more than the preserve of privileged minorities. Hence the need for investment and economic development.

perceived. Already, public-private sector co-operative ventures are putting the Internet to work as a channel for disseminating knowledge, whether medical advice, farming techniques or educational support to people in least-developed countries. The International Chamber of

Amid all the hype about e-commerce and the new economy, it is easy to forget that its success will ultimately depend on traditional business values and disciplines.

Private enterprise will certainly play its part. The Okinawa Charter on Global Information Society, issued after the G8 summit, remarked: "The private sector remains a central actor driving ICT forward in developing countries and can contribute significantly to international efforts to bridge the digital divide."

Ultimately, the divide will not be bridged by fine words or by the helping hand of governments of industrial countries, however generous. The key lies in economic development.

This requires continued trade liberalisation through the World Trade Organisation so that markets are opened up to the products and services of the developing world. It means that the governments of developing countries must encourage foreign direct investment through business-friendly policies backed by political and social stability and the rule of law.

The Internet is no magic wand, nor can it bring about change on its own. It depends entirely on

Amid all the hype about e-commerce and the new economy, it is easy to forget that its success will ultimately depend on traditional business values and disciplines.

Products and services will still have to satisfy the customer, costs and profit margins have to be carefully watched and markets studied. In fact, even greater management and organisational capacities will be needed. Ability to deliver on time and as ordered will be crucial to commercial success.

For businesses in developing countries, the great boon of e-commerce is that it puts them in touch with markets and business partners that they otherwise would have scant chance of reaching. In theory at least, the Internet is the great equaliser – provided that companies use it to master the new arts of providing services online and doing business electronically.

Information technology is set fair to becoming the great accelerator, as the business leaders at the ICC regional conferences so clearly

Commerce supports these projects while focusing its own effort on helping companies, in particular small and medium-sized enterprises, to do business over the Internet with maximum confidence and at least cost.

ICC has been engaged in several initiatives.

◆ In December, we agreed with the Global Business Dialogue on Electronic Commerce and the OECD's Business and Industry Advisory Committee to work together to identify best practices for e-commerce and share expertise in such subjects as Internet property rights, bridging the digital divide, and alternative dispute resolution.

◆ ICC played a pivotal role in devising a Global Action Plan for e-commerce that brings together dozens of private sector initiatives. They cover the full range of self-regulation, including marketing and advertising standards, defences against illegal content, privacy protection, certification and authentication of transactions, and trustmarks enabling users to identify reliable vendors.

Business perspective

development

◆ An online application is about to be launched that enables businesses to conclude contracts with the help of secure interactive software. The new business-to-business facility will be based on ICC's model sale contract, which has been in worldwide use since 1997.

◆ ICC's International Bureau of Chambers of Commerce has established World Chambers Network (WCN), a global hub on the Internet where chambers and individual companies exchange information about themselves, their products and business opportunities.

ICC has built its reputation on devising self-regulatory standards and mechanisms for paper-based trade. We have long argued that self-regulation by business users of e-commerce is the most effective and practical solution, considering the rapidity of technological change and the difficulty of enforcing national laws in cyberspace.



Getting the wired economy rolling

Business urges governments to leave untouched all those areas where there is no clear evidence that business conduct will have a negative effect on society or on the fundamental rights of individuals.

For governments, the emphasis should be on achieving regulatory efficiency by allowing business to take on as much of the task as possible. After all, business has a strong interest in creating trust across the whole spectrum of users and providers of services. Without such trust, there will be no electronic commerce.

But where should the dividing line be drawn between business self-

regulation and government regulation? Clearly, governments must ensure that the law is respected in cyberspace, for example, to protect intellectual property and stop criminal abuse.

Business accepts the key role of governments in establishing Internet policy and is no less determined that the Internet should

not become a free-for-all. In general terms, business urges governments to leave untouched all those areas where there is no clear evidence that business conduct will have a negative effect on society or on the fundamental rights of individuals.

I remain optimistic that governments will hold to a minimalist and carefully co-ordinated international approach to e-commerce regulation. The future of e-commerce depends on it – as do the hopes placed in e-commerce in the industrial and developing worlds alike. The stakes are high for all of us. ■

Photo: Reuters

Sri Lanka's telecom revolution

ROHAN SAMARAJIVA, VISITING PROFESSOR OF ECONOMICS OF INFRASTRUCTURES, DELFT UNIVERSITY OF TECHNOLOGY; FORMER DIRECTOR-GENERAL OF TELECOMMUNICATIONS, SRI LANKA

For many developing countries, inadequate telephone service is a major obstacle to joining the e-commerce age. Sri Lanka's experience shows that competition is the key to improving telecom access.

Phones literally mean business in the e-commerce age, but in developing countries just getting connected can be a nightmare, with interminable waiting lists running into several years for service from a monopoly state provider. Anxious not to be left behind, many governments in the developing world have embarked on telecommunications reform in the hope of rapidly making phone services available to the entire population. Generally, this has involved separating the actual job of operating the phone service from policy and regulation; at least partial privatisation of telecommunications services; the introduction of competition; and the establishment of regulatory agencies to provide safeguards for competition and consumers.

Private investment in telecommunications has increased significantly and there has been an unprecedented expansion of connectivity. Access is still concentrated in urban areas and among the relatively wealthy, but is also reaching previously excluded groups. Mobile phone services using prepaid cards, for instance, are helping those without a fixed address to get connected (see article by Joanne Taaffe in the Economy section).

If ever there was need for an example of how reform can improve performance, then Sri Lanka has to be it. This small country's experiences in telecom reform show that competition is above all else the key to improving telecom access. Without it, poorly staffed regulatory agencies have trouble surviving, let alone actively fostering competition and protecting consumers from threats to their independence by politicians and bureaucrats trying to claw back power.

But when competition is added to the mix, the incumbent operators come under pressure to tackle inefficiency, waste and corruption, or face losing their customers. Governments tend to toe the line too, anxious as they are to see their policies succeed. If governments falter, competitors with businesses and money at stake will exert pressure to prevent the rollback of reforms that made their existence possible. And customers can exercise their prerogative of choice and refuse to accept poor service.

A decade of sweeping reforms has transformed Sri Lanka's telecom landscape. The level of fixed phone access multiplied almost fivefold, with the teledensity (the number of fixed line phones per 100 people), rising from 0.73 in 1991, at the start of the serious reforms, to 3.64 by the end of 1999. Mobile teledensity increased from 0.01 in 1991 to 1.22 by the end of 1999, according to International Telecommunication Union figures. The levels may still be low compared with an industrial country such as the United States, where there are 66 fixed phones for every 100





Photo: Reuters

Getting Sri Lanka online

people (see Databank). But for a small country of just 19 million people, these changes are tantamount to a communications revolution. And compared with neighbouring India, for example, Sri Lanka is doing well; India had around 2.66 fixed phones per 100 people at the end of 1999, and 0.19 mobile phones.

Sri Lanka's first private operating licence was granted in 1989 to a mobile operator and by 1995 four mobile operators were engaged in

vigorous competition. Today, eight operators, including the partially

For a small country of just 19 million people, these changes are tantamount to a communications revolution.

privatised state operator, Sri Lanka Telecom Ltd. (SLTL), are licensed to provide data communication services using their own facilities. Additional operators continue to be

licensed to provide services, including Internet, on the basis of leased facilities. Five paging operators, a trunk-radio operator offering a closed user group mobile phone system for commercial operators, a specialised infrastructure provider and two payphone operators have also been licensed.

Softly does it

This gradual approach, beginning with competition at what were then the margins of the sector, was the

result of a traumatic experience in 1988-89, when trade union unrest forced the government to retreat from a long-planned partial privatisation and opt instead for converting the state monopoly into a corporate entity. The privatisation experience made the government cautious early on. While various policy pronouncements were made about the number of licences that would be issued in 1989, for example, no formal guarantees were given to any operator as to the level of competition they would face. As a result, the incumbent operator at the time did not feel the

employees. The internal organisation of the company was radically changed and the growth rate in supplying new lines soared. In 1996-99 the annual growth rate in the supply of new lines more than doubled to 32%. Chronic under-utilisation of capacity has been eliminated, serious efforts are being made to improve customer relations, and the opportunities for petty corruption that was endemic in the old order have been reduced.

An attribute of good competition policy is that it can reinforce the regulatory regime. The Sri Lankan

the interconnection decisions, and for the first time the appeal went to the courts, not to the political and administrative authorities as in the past. The incumbent lost the case – small but compelling evidence that competition helps ensure that regulatory and judicial systems operate effectively.

Nonetheless, the fact remains that Sri Lanka's fledgling regulatory agency, the Telecommunications Regulatory Commission, is not quite up to the full task of reform yet. Its staff is for the most part under-skilled and underpaid and

In 1996-99 the annual growth rate in the supply of new lines more than doubled to 32%. Chronic under-utilisation of capacity has been eliminated, and petty corruption has been reduced.

pressure. Growth in fixed line access remained slow as a result. The annual average growth rate of new lines was 15% for 1992-95, which was not enough to reduce waiting lists, and consumers became impatient.

All that was to change dramatically in 1996 when the government introduced direct competition, by granting two fixed-access licences. This was competition where it mattered most, even if the new operators were able to install only a small number of fixed lines that year. In August 1997, the government sold 35% of the operator to NTT Corporation, the government-controlled incumbent in Japan, for US\$225 million and signed a management agreement with them. A further 3.5% stake went to the Sri Lankan operator's

government separated regulatory functions from operations in 1991, but the regulatory body remained a government department lacking resources and qualified personnel. In 1996, when the fixed-line operating licenses were awarded, the regulatory authority was given the resources to build up the necessary expertise and a degree of independence. It recruited new personnel and launched a series of initiatives, including fixed and mobile interconnection proceedings.

This established a sound foundation for competition, and resulted in the first public hearing on the improvement of billing, and the first successful order against the incumbent for violation of licence conditions. The incumbent operator appealed against one of

there is still some ambiguity about its relationship to government. The courts have commented on "threats" to its effectiveness, possibly caused by lack of independence from Sri Lanka Telecom and its majority owner, the finance ministry. To be effective, the regulatory agency must build up its independence, expertise and its confidence. Hopefully, in Sri Lanka and elsewhere, the result will be not only a growing telecom industry, but a well-regulated one as well. ■

References

- ◆ OECD, *Mobile Phones: Pricing Structures and Trends*, 2000.
- ◆ For detailed information on telecommunications issues, visit the International Telecommunication Union web site at <http://www.itu.int>

Hong Kong: Asia's global e-economy

ALAN SIU, HONG KONG DEPUTY SECRETARY FOR INFORMATION TECHNOLOGY AND BROADCASTING

E-commerce is developing so fast that making it work is often a matter of trial and error. Hong Kong's experiences offer useful lessons for those less advanced in the online stakes.

Hong Kong has been quick to embrace e-commerce, anxious to preserve its strength and competitiveness in the global economy. The government has taken the lead in promoting the new technology to ensure that the territory maintains its position as a regional hub for the Asia-Pacific region as well as the commercial and financial gateway to the world for China.

According to industry estimates, global revenue generated by e-commerce will amount to nearly US\$7 trillion in 2004, accounting for more than 8% of the world's total sales of goods and services. Hong Kong's own e-commerce business is forecast to surge to US\$70 billion in 2004, and the London-based Economist Intelligence Unit has ranked Hong Kong in the world's top 10 for e-business readiness.

The Hong Kong government announced in November 1998 its "Digital 21" strategy for becoming an e-commerce hub for the Asia-Pacific Region and a leading world digital city. It has since been working to bring the whole territory on board. A key problem in encouraging e-commerce and other online transactions is building public confidence in the new systems. So in January 2000, Hong Kong passed legislation based on the United Nations e-business model law giving electronic records and digital signatures the same legal status as their



Asia's shining light

Photo: Reuters

paper-based counterparts. The law includes provision for the establishment of certification systems to verify the identities of those online, and ensure confidentiality and integrity of the messages exchanged.

To demonstrate its own confidence in the system, the government agreed to accept information from the public by electronic means in areas from voter registration and driving licence applications to tax assessment. This has promoted the development of private online services such as online stock trading, Internet betting for horse racing, and Internet banking services, as well as public sector services such as government e-procurement.

Of course, there can be no e-commerce or Internet relationship between government and the public without the telecommunications access to get people online. Hong Kong has 100% full broadband coverage for commercial buildings and over 90% coverage for domestic households, all developed through investment from the private sector. With 71 mobile phones per 100 population, Hong Kong has one of the highest mobile ratios in the world (see Databank). Next year the government plans to issue third generation mobile phone licences, allowing mobile e-commerce applications to develop.

While most of the investment in the telecommunications infrastructure has

**interaction
management
and call centre
solutions**

45,000,000



customer interactions per day

And every single one counts. Thanks to Genesys Enterprise Interaction Management (EIM).

Over 600 successful companies worldwide use our solutions to reduce interaction costs. Increase revenues. Build loyalty. Add value. Every time.

Call us today or visit our web site to find out how Genesys EIM and call centre solutions can help your organisation to optimise interactions and drive business profitability.

Genesys helps businesses to optimise every customer interaction, building strong and profitable relationships, increasing sales volumes, reducing sales costs and driving business profitability. To discover how we can help **your** business in the Middle East, contact Ryan Finlay today or visit our web site.

www.genesyslab.com Tel +44 778 571 6376 Fax +357 4647 266


GENESYS®
Better Interactions.
Better Business.

come from the private sector, the government has been determined to lead by example in winning its citizens over to the e-commerce world. The Electronic Service Delivery (ESD) scheme launched in December offers access to public services online around the clock, ranging from finding a job to renewing a vehicle licence or filing a tax return. The ESD system uses digital signatures and cryptographic technology to authenticate the identity of users and to ensure the integrity and confidentiality of the information transmitted. The same system also provides business and life style services.

The government had already launched one of the world's first online tendering systems for public contracts in April. This has so far awarded 720 tenders worth an estimated US\$110 million. And in 2003 the government plans to launch smart identity cards to the special administrative region's 6.8 million citizens. These cards will not only act as proof of identity, but also have the capacity to support multiple applications, including driving licence, public library card, digital certificates and e-purse functions.

Such initiatives alone are not enough to win the population over to online living, particularly those who do not have a computer terminal in their home. To deal with this, community cyberpoints have been set up in government offices, community centres, public libraries and post offices, offering public computer facilities with Internet access for citizens to use free of charge. Some cyberpoints have special software to make it easier for the blind and visually impaired to use them and the government has organised large-scale

community IT training and awareness programmes to reach less privileged groups such as the elderly and disabled. And from early next year, ESD services will be available at public information kiosks in convenient locations like subway stations, major shopping malls and supermarkets.

One of the major challenges is to persuade the small- and medium-sized enterprises (SMEs) that account for more than 95% of Hong Kong businesses to get into e-commerce. The government has used a wide range of traditional tools such as seminars, exhibitions, publicity material, television and radio messages and

The public can register to vote, bid for a government contract or place bets on horse races online.

hotline services. But it has found that one of the most successful ways of spreading the message to SMEs is by inviting representatives from businesses that have successfully engaged in e-commerce to share their experience. Business people would far rather hear from their counterparts who work in the same environment and who face the same kind of problems, than from the bureaucrats.

Another key element in getting SMEs online is to make it simple and inexpensive for them. One solution has been the emergence of application service providers (ASPs). Users who subscribe to these services do not need to spend money on developing their own systems, nor do they need to hire dedicated staff to manage the system as the ASPs will take care of

both, with the shared cost covered in the subscription fee.

Hong Kong's experience of the e-commerce revolution, coupled with its position as a regional hub in the traditional business world, puts it in an ideal position to help mainland China make best use of e-commerce opportunities once it joins the World Trade Organisation (WTO). The volume of trade between China and the rest of the world will rise, creating numerous opportunities for the development of cross-border e-commerce to and from China. Hong Kong's financial, telecommunications and transportation infrastructure, expertise in doing business with the mainland, and language proficiencies in English and Chinese, mean the territory is ideally placed to become the hub of all these electronic transactions.

Hong Kong already serves as the conduit for many international companies doing business in mainland China. Similarly, mainland enterprises that need to compete overseas can make use of Hong Kong's management, accounting, legal affairs, and information technology skills. On the financial side, capital going into mainland China after the WTO accession is likely to flow through Hong Kong. The special administrative region of China is already an international financial centre and most publicly listed mainland Chinese companies are quoted there. And Hong Kong, with the largest venture capital market in Asia, can offer the benefit of its e-commerce experience to other parts of the Asia Pacific region as well. ■

Reference

- ◆ Visit the ESD web site at www.esd.gov.hk

Trintech: making payment safe, simple and secure

Payment is at the heart of eCommerce, and Trintech has been at the heart of electronic payment since its creation. Throughout the world, Trintech's PayWare family of products is helping to secure payment in the physical, virtual and mobile worlds of commerce.

About Trintech

In this digital age, Trintech supplies the infrastructure that enables reliable and secure payment through multiple channels – physical, virtual or mobile. We have a simple objective at Trintech: to produce the best ePayment infrastructure solutions that ensure consumers, business and financial institutions can pay with ease and confidence.

The companies benefiting from our commitment to supplying the best software for securing electronic payment include some of the world's most prestigious financial institutions. Our technology provides the most up to date end-to-end solutions to handle credit, debit, chip and corporate procurement card applications.

Our products

Over fourteen years of payment experience underpins our range of ePayment infrastructure solutions, for commerce conducted over the Internet or in the physical world.

PayWare® eIssuer™ is a server based virtual card distribution solution that enables card issuers, telcos, service providers and private label card organisations to issuer branded virtual payment ezCards to their online customers.

PayWare® mAccess™ addresses the payment requirements of the wireless market by providing bank card issuers, telephone operating companies (telcos), wireless carriers and manufacturers with a server-based solution, that seamlessly and securely authenticates the user and transfers payment details from wireless devices through to the payment processor for settlement.

PayWare® eAcquirer™ is a payment gateway infrastructure solution for financial institutions, payment processors and card organizations. It enables them to authorize, capture, route and settle all card-based transactions originating from both the physical and the virtual worlds of commerce.

PayWare® eMerchant™ offers a variety of sophisticated payment technologies for differing merchant payment scenarios and channels.

For multiple environments, multiple currencies, multiple channels and multiple layers of security, there is only one solution. PayWare Everywhere.

Trintech global services

At Trintech, we provide value added business solutions incorporating intelligent advice, proactive consulting and planned solution deployment as well as ongoing round-the-clock support services.

Benefit from a wide range of services provided by Trintech ePayment experts, putting in place the infrastructure, know-how and skills necessary to build and service a world-class ePayment solution.

PayWare Partners

Trintech's success is underpinned by our partners, who are key to ensuring we provide the best infrastructure solutions to our growing customer base. Trintech has created the PayWare Partner program to serve the complex needs of our customers in a professional and timely fashion.

The PayWare Partner program consists of a network of specialised and highly trained local partner organisations, dedicated to implementing and supporting PayWare solutions around the world. Trintech is the payment technology provider of choice for many of the world's leading companies, including Visa, MasterCard, Deutsche Bank and regionally at Comtrust (UAE), National Bank of Kuwait and National Commercial Bank (KSA).

Partnerships have been formed with many industry leaders, including: Compaq, Entrust, Intershop, Logica, MasterCard, Microsoft, Motorola, RSA, SAP, Sun Microsystems, Unisys, VeriSign and Visa.

From our operation centres in Europe, US, Asia-Pacific and Latin America, we now have more than 600 dedicated professionals, supplying over 1200 enterprise customers in 30 countries worldwide. Everything we do is designed to make payment – in any environment – safe, simple and secure. ■

Contact Trintech

USA:

Trintech Inc, 2755 Campus Drive, Suite 220, San Mateo, CA 94403, USA.
Tel. +1 650 227 7000. Fax. +1 650 227 7100. info-usa@trintech.com

Ireland: Trintech Group Plc., Trintech Building, South County Business Park, Leopardstown, Dublin 18, Ireland.

Tel. +353 1 207 4000. Fax. +353 1 207 4005. info@trintech.com

Germany:

Trintech GmbH, Siemensstraße 20, 63263 Neu-Isenburg, Germany.
Tel. +49 6102 7850. Fax. +49 6102 2818. Info-de@trintech.com

The Commonwealth's action plan

DR MOHAN KAUL, DIRECTOR GENERAL, COMMONWEALTH BUSINESS COUNCIL

The Commonwealth generates some 20% of the world's trade. Its digital initiatives are designed to help many of the world's developing countries into the global marketplace.

The changes being wrought on the world by new technologies are dramatic. The impact of information technology and related to that, electronic commerce, will change the everyday operations of businesses, consumers and governments alike. It is a particular challenge for the Commonwealth to prevent the economic gaps between the 54 member countries widening, with some countries being left behind in the technological race.

The importance of e-commerce has been growing exponentially over the past few years. A reflection of the growing importance and reach of e-commerce in the 21st century is the growing number of users of the Internet. According to the OECD, the number of users has increased from three million people in 1994 to over 378 million people online globally today. Current estimates place the revenue generated globally from electronic commerce at US\$650 billion (see article by Vladimir López-Bassols and Graham Vickery in the Economy section).

E-commerce has the potential to deliver significant benefits to business, consumers and governments alike. For businesses,

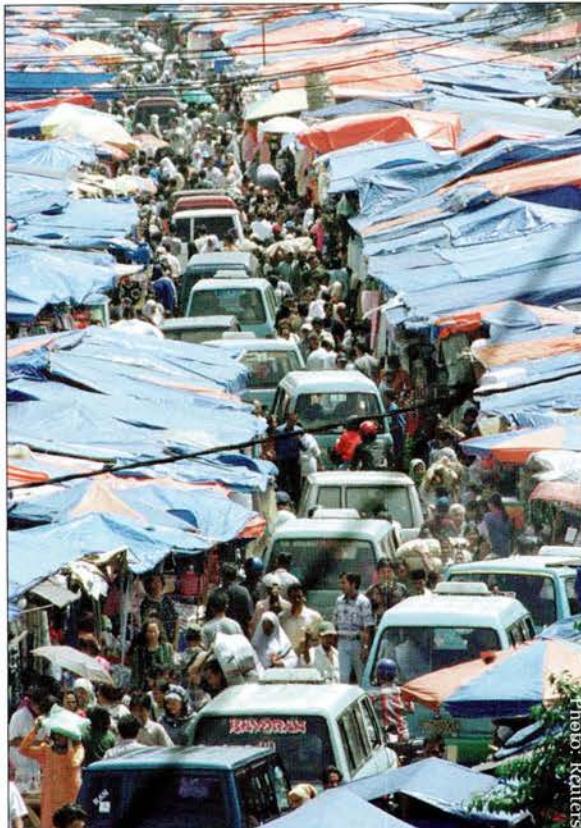


Photo: Reuters

E-marketplaces would be more fluid than this

e-commerce enables greater access to distant markets, reduces the time they take to supply those markets, and reduces production, storage and transaction costs. Doing business electronically literally shrinks the distance between producers and customers (both commercial and private) by allowing them to communicate directly, without the intervention of traditional

intermediaries such as agents, importers, exporters, wholesalers and retailers, enabling businesses to learn more about their customer base.

E-commerce can thus increase competition by lowering barriers to entry and improving access to information and a wide range of goods and services. E-commerce in general lowers the transaction costs associated with doing business. For example, it is estimated that private-sector firms which have put their supply chains on the web have made savings in the region of 20%.

Consumers also benefit from access to a wider range of information and products, available 24 hours a day, often at cheaper prices than similar, locally available products.

And for governments the potential for cost savings and increased efficiency in delivery of services and information to citizens is immense. *The Economist* magazine argues that the potential for savings for governments comes from the sheer scale of public sector spending and from the opportunities to make internal processes more efficient. The same *Economist* article estimates that American federal, state and

local procurement spending on materials and services this year will be around \$550 billion. If the US government replicated the use of information technology that some big private sector companies have instituted they could save an estimated \$110 billion a year.

CBCmarketplace.com is expected to grow to a buyer-supplier universe of 20,000 companies in the next three years, with a transaction volume of over \$1 billion.

These kinds of savings can be replicated in Commonwealth countries to great advantage if aspects of e-government, for example in the area of e-procurement, can be adopted.

At the recent Commonwealth Business Council (CBC) conference in Malaysia it was stressed that Commonwealth governments and companies must prepare to face the digital age. There is potential for member governments to share Commonwealth experiences in the legal and regulatory environment of e-commerce legislation. It was concluded that the Commonwealth is also a source of global expertise in e-business and service; it provides tremendous opportunities for incoming trade and investment in this area; and has a role in promoting public-private partnerships enabling growth in electronic commerce amongst its member states.

The CBC was set up by heads of government at their Edinburgh summit in 1997 to promote trade and investment between Commonwealth countries. While still a new organisation, based on a membership of 160 leading corporations from 26

Commonwealth countries, the CBC has a number of e-commerce initiatives in place as well as plans for further conferences. These include a working group on electronic commerce, which brings together experts from the private and public sector to identify ways to promote and activate

e-commerce in Commonwealth countries as quickly as possible. Their recommendations will be presented to the Commonwealth Business Forum and Heads of Government Meeting in Australia in October 2001.

Further, the CBC and the Commonwealth secretariat will attempt to promote the direct exchange of experiences among enterprises and organisations involved in e-commerce in Commonwealth countries and to disseminate these experiences as widely and effectively as possible. In addition, the aim is to promote business and government co-operation and partnerships in the development of e-commerce.

An exciting initiative using the latest technology is the CBC's trusted international digital marketplace, **CBCmarketplace.com**, operated jointly by the CBC and elcom.com (UK), a leading provider of digital marketplace technology. It will require only an Internet connection and web browser software instantly to access the system anywhere in the world. The marketplace will effectively empower the traditional "buyer-supplier" relationship from the initial point of

contact through completion of the secure financial transaction. It will be a unique international marketplace for large and small companies, providing global access to companies from developing countries in a trusted digital business environment. It will be of particular value in helping small countries meet the challenge of globalisation and is expected to grow to a buyer-supplier universe of 20,000 companies in the next three years, with transaction volume of over \$1 billion.

Other digital initiatives are the Commonwealth Business Network, **COMBINET.net**, which links more than 500 chambers of commerce and manufacturing associations, and the Commonwealth Business Council's Virtual Trade Fair, **cvtf.org**, on the internet. Under development are **CBCInvestlink.com**, which will access investment opportunities first and **CBCTradepolicy.net**, for information about changes in trade policy issues around the world. All these will assist the development of business in 54 countries serving a market of 1.6 billion people, for it should be remembered that the Commonwealth is a microcosm of the wider international trading community, generating approximately 20% of the world's trade.

The CBC is determined to make the most of the "Commonwealth factor", particularly in the world of e-commerce. We have proved that we can make an impact on the debate on globalisation. The challenge is to enable an equality of opportunity, through the imaginative application of new technology, thereby assisting the development of the Commonwealth's potential as a dynamic network for trade and investment. ■

The UN in action

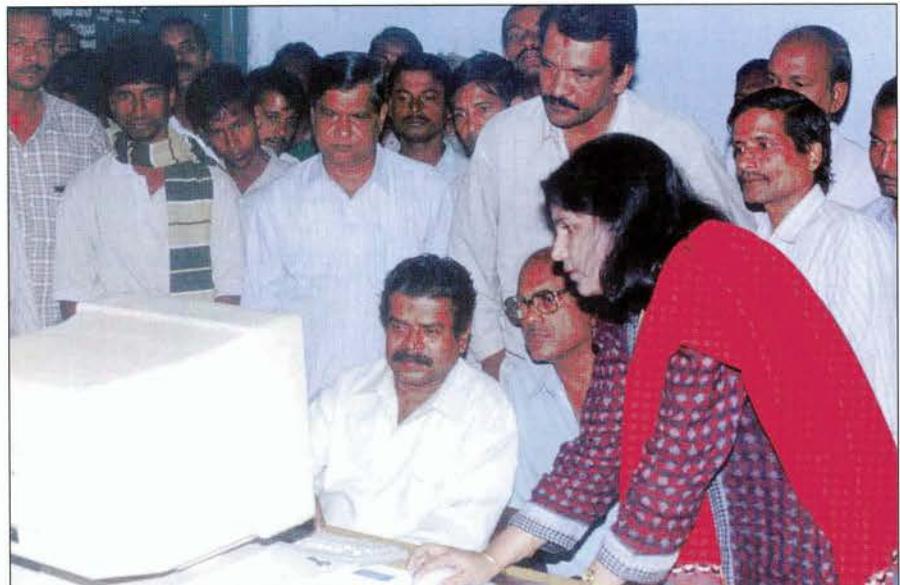
AMIR DOSSAL, EXECUTIVE DIRECTOR OF THE UNITED NATIONS FUND FOR INTERNATIONAL PARTNERSHIPS

The emerging markets across the globe are amongst the new drivers of the digital revolution. They can play an important part in lifting living standards in developing countries.

"The United Nations must act as a catalyst, to stimulate action by others. And it must fully exploit the new technologies, especially information technology." Kofi Annan, Secretary-General of the United Nations

If globalisation is meant to bring benefits to all peoples, the benefits of a technology-driven economy must be shared with the poor. Trade, especially open trade, is key to bringing digitally poor countries into the fold. While advanced economies, through the interaction of governments and multinationals, can play a pivotal role in this process, the role of emerging economies cannot be ignored. These economies across the globe are also emerging as the new drivers of the digital revolution, and can and do play an important part in lifting living standards in developing countries. Countries across Africa, the Arab States, Eastern Europe and Latin America are realising the benefits and the need to harness new technology for development. This effort, which covers formal and informal trade, including labour needs, must be encouraged since it represents the pedestal for a quantum leap out of poverty.

The business environment is evolving: publicly quoted companies are keen to get a foothold in



Hands on approach

emerging markets and to engage the new generation of socially conscious consumers and investors. Young, wealthy entrepreneurs are also

Trade, especially open trade, is key to bringing digitally poor countries into the fold.

looking for new challenges. The variety of ways in which emerging economies participate in this process ranges from capital investments, including funding modalities such as micro lending, to knowledge transfer and Internet access. Economies with an e-commerce bias are well

positioned to leapfrog the information age. The advent of satellite technology and wireless application protocol (WAP) offers new opportunities to facilitate Internet access with resultant trading opportunities. With Internet access, developing countries can join the global marketplace and contribute to and participate in the global knowledge communities and markets. They can have access to education, health, commercial and other services at rapid speed and affordable costs.

While we must rely primarily on the OECD countries to be the engine of the new economy, it is the emerging

countries which serve as a powerful conduit to this process. They provide the channel for developing countries to embark in the digital revolution. Strengthening these emerging economies and enhancing their e-commerce capacity will both create new markets and increase existing

and long-term sustainable development objectives.

The UN funds, programmes and specialised agencies are encouraged to integrate technology requirements within their projects so that Information Technology assistance

development. The recent Millennium Summit endorsed this Ministerial Declaration. The setting up of an ICT Task Force will provide an interface between the information technology community and the development community, bringing together private sector, foundations, and the donor

With Internet access, developing countries can join the global marketplace and contribute to and participate in the global knowledge communities and markets.

ones. This in turn will generate an increase in the demand for new goods and services; a demand that will partly be supplied by developing countries.

What can the UN do?

The United Nations can play a pivotal role by providing a combination of vision and viable strategies. The Secretary-General has brought global visibility to the issue by highlighting the challenge of building digital bridges in his *Millennium Report We the Peoples: the role of the United Nations in the 21st Century*. The Report, endorsed by Member States at the Millennium Summit in September 2000, went out of its way to stress the potential contributions that IT can make to poverty reduction and development, and to providing better services in humanitarian missions and peace operations. The United Nations will play a facilitating role in bringing together governments, international organisations, the private sector, foundations, NGOs, etc., in a cohesive effort to build capacity in emerging and developing countries. Efforts will be focussed on creating a platform conducive to technology-related private sector investments

will become a routine component of projects. Consideration is also given to bringing together training initiatives, building on the experience of the World Bank and UNDP, and perhaps to establishing a joint multilateral e-learning Institute.

One concrete way to increase access to ICT in developing countries is to encourage opening of the telecom industry so as to attract the necessary investment in infrastructure and encourage the competition needed to bring costs down. In that regard, the International Telecommunication Union would help to strengthen the capabilities of national telecommunications organisations and develop policy guidance, while providing technical advice.

The following are some of the steps that the UN has taken to address digital divide issues:

1. A UN strategy for bridging the digital divide

The July 2000 session of the Economic and Social Council resulted in a Ministerial Declaration in which the Council decided to establish a task force on ICT for

community to develop innovative modalities to bring ICT capacity to the developing world.

The Task Force and the Dot.force launched by the G-8 in late July (whose secretariat is co-hosted by the World Bank and UNDP) will be complementary and synergistic, leading to a unique global effort involving all the potential partners; especially the stakeholders.

As a precursor to this effort, an Advisory Group, chaired by H.E. José María Figueres, former President of Costa Rica, will present a detailed proposal to the Secretary-General, on the basis of consultations with all the actors, by January 2001. Members of this Group include CEOs of major IT-related multinationals from the USA, Japan, France and equivalent high-calibre people from developing countries, as well as several top-ranking people from governments and foundations. The ultimate outcome of this consultative process, leading to the creation of an ICT Task Force, will be to recommend and oversee concrete technology projects for bridging the digital divide. At the same time a Trust Fund will be established to enable funding of the projects.

Emerging markets

development

2. UN Information Technology

Volunteer Service (UNITeS)

UNITeS, one of the initiatives announced by the Secretary-General with his Millennium Report, is a global consortium of high-tech volunteer corps. By mobilising volunteers, both online and on-site, UNITeS provides training on the use and opportunities of information and communication technology. The application of information technology in areas such as health, education, environment and e-commerce is expected to result in significant benefits for those who have been marginalised by poverty and lack of access to basic services. The UN Volunteer (UNV) programme brings logistical support, human resources and a record of nearly thirty years of experience in the field of volunteerism to this new endeavour.

UNITeS involves a broad range of institutions worldwide, including governments, civil society, development agencies, academia and the private sector. The programme intends to foster the participation of developing country nationals as volunteers to the greatest possible extent and will give priority to South-South exchanges. In the long run, it is hoped that UNITeS will stimulate the creation of additional digital corps worldwide.

UNITeS became operational on 1 August 2000, with the first volunteer taking up his assignment in India, in the State of Orissa. Other UNITeS initiatives in progress include projects in Bhutan, Botswana, Chile, Ecuador, Jordan, Mongolia, Senegal and South Africa.

3. Health InterNetwork

Applications using the Internet and emerging telecommunications and technology have great potential for improving health, primarily by increasing the information available both to the public and to health workers. Such applications allow doctors and other health care workers to exchange information, access training and educational resources, and provide services across geographic and social boundaries.

UNITeS is a global consortium of high-tech volunteer corps.

The Health InterNetwork, a second initiative announced in the Millennium Report, aims to enable healthcare workers, researchers and policymakers in developing countries to gain access to state-of-the-art health information using modern technology, including the Internet.

The Health InterNetwork, led by the World Health Organisation, will create a global public health portal on the Internet and establish health access sites. (Some 10,000+ new health information sites are expected to be made available in urban and rural clinics, public health care facilities, hospitals and medical schools by the end of 2003). These sites, both telephonic and wireless, will be set up in the poorest nations across the world. Public health professionals in these countries will have routine access to customised, appropriate medical information. This will require not only providing the technology and appropriate training, but also creating new

content and applications designed to address the specific professional, social and cultural needs of these countries. The project will enable interactive communication and online community networking among public health users, and enhanced monitoring of disease and health status.

4. Strengthened emergency response capability

A major disaster-response programme, 'First on the Ground', has been established to provide and maintain mobile communications equipment and expertise for humanitarian relief operations, and help improve existing communications networks where appropriate. The programme will draw on support from Ericsson's offices in more than 140 countries worldwide and will focus on disaster preparedness as well as response.

The United Nations-Ericsson partnership, led by the Office for the Co-ordination of Humanitarian Affairs, includes all UN agencies involved in emergency response and mitigation, as well as the International Federation of Red Cross and Red Crescent Societies (IFRC). A detailed Disaster Relief Programme is being developed by Ericsson to ensure preparedness by them at the local level. This includes the establishment of microwave links; the supply of mobile and satellite phones to relief workers; and the provision of corporate volunteers to work with the UN system on the ground. ■

Reference

◆ <http://www.unites.org>

Novell: eBusiness made simple

eBusiness made simple

The eCommerce explosion is offering organisations of all sizes new opportunities for growth. If businesses are to take full advantage of the new market dynamics brought about by eBusiness opportunities, they need to build, secure, integrate and maintain highly customised eBusiness relations with customers, partners and employees on the Net. Many organisations however, have heterogeneous networks composed of different segments, each segment running a different platform. The thought of integrating such a system and implementing centralised control over it is daunting to say the least. Now Novell has addressed the problem with a solution called iChain – an open framework for eBusiness solutions. With an iChain infrastructure, businesses can link all the different elements of the network into a coherent whole and move on-line without sacrificing security. The benefits to business include increased revenue potential, reduced administration costs and increased customer satisfaction and loyalty.

Leveraging existing IT investments

The good news is that integrating your system with iChain does not mean expensive upgrades or retrofits to existing hardware and applications. The administrator can manage the network through a single utility, designed to work with all network servers, regardless of the platform they support. iChain also includes tools to adapt e-business applications made by third-party vendors so that they function seamlessly within the integrated system.

Security and multi-level authentication

In addition to joining the elements of your network into a unified system, iChain also provides the tools to make that system secure. In combination with eDirectory, iChain provides the ability to identify user identity, and clearance through use of multi-level authentication, thus providing a security infrastructure that allows connections with trading partners and eBusiness transactions to take place.

Speed and convenience

Once the network is secure, iChain makes it convenient to use. Studies have consistently shown that users will not wait for a slow Web page to download. iChain solves this problem by combining the speed of the world's fastest caching system—Novell's ICS—with the convenience of Web Single Sign-On.

Single sign-on

Single Sign-On makes it possible for a user to log in just once in order to gain access to multiple applications, platforms, and even Internet domains, instead of having to enter a password and user ID for each one. Navigation is drastically simplified and security is maintained because the level of access is determined by the user profile you establish.

Digital communities

In addition, iChain attracts customer loyalty through the use of digital communities, linking groups of users together, by predefined rules. Content and access privileges can be customised for each given community, providing the user with a unique, personalised experience at your Web site or within your network. Users can belong to more than one community, or move automatically between communities if their status changes. Digital communities and Single Sign-On work for all internal and external users, whether they are employees, business partners, suppliers, or customers.

Real life scenarios

Novell is partnering with a number of Consulting Systems Integrators to build eBusiness solutions based on the iChain architecture. Gulfstream Aerospace, a manufacturer of Gulfstream business aircraft, has selected iChain as the security platform for its presence on the Net. Gulfstream is leveraging existing Novell directory services for rapid deployment to employees, and the combination of iChain and eDirectory makes it possible for Gulfstream to provide customers and partners with secure access to personalised content and services over Gulfstream's Web site. This secure link simplifies the complexities of eBusiness and provides the power and flexibility of the infrastructure needed to succeed in the Net economy.

iChain has also been chosen by Cap Gemini Ernst & Young, the world's fifth largest IT Services and management consultancy company, as a foundation for a business-to-business eCommerce exchange for the United Kingdom's Ministry of Defence. "We chose Novell's iChain architecture because it is a secure, flexible platform that can empower a number of eBusiness applications like procurement, order fulfillment, human resources, asset tracking, and eCommerce," said Andy Mulholland, chief technology officer at Cap Gemini Ernst & Young United Kingdom. "In the case of the Ministry of Defence (MoD), iChain provides the foundation for us to develop a flexible, standards-based solution for addressing their unique business needs across and beyond the enterprise." ■

How much did Harry Potter cost?

H. SCOTT MATTHEWS, RESEARCH SCIENTIST IN ECONOMICS; CHRIS T. HENDRICKSON, HEAD, DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING; AND LESTER LAVE, HIGGINS PROFESSOR OF FINANCE AND ECONOMICS, CARNEGIE MELLON UNIVERSITY IN PITTSBURGH

E-commerce is growing and environmentalists should be happy. Or should they?

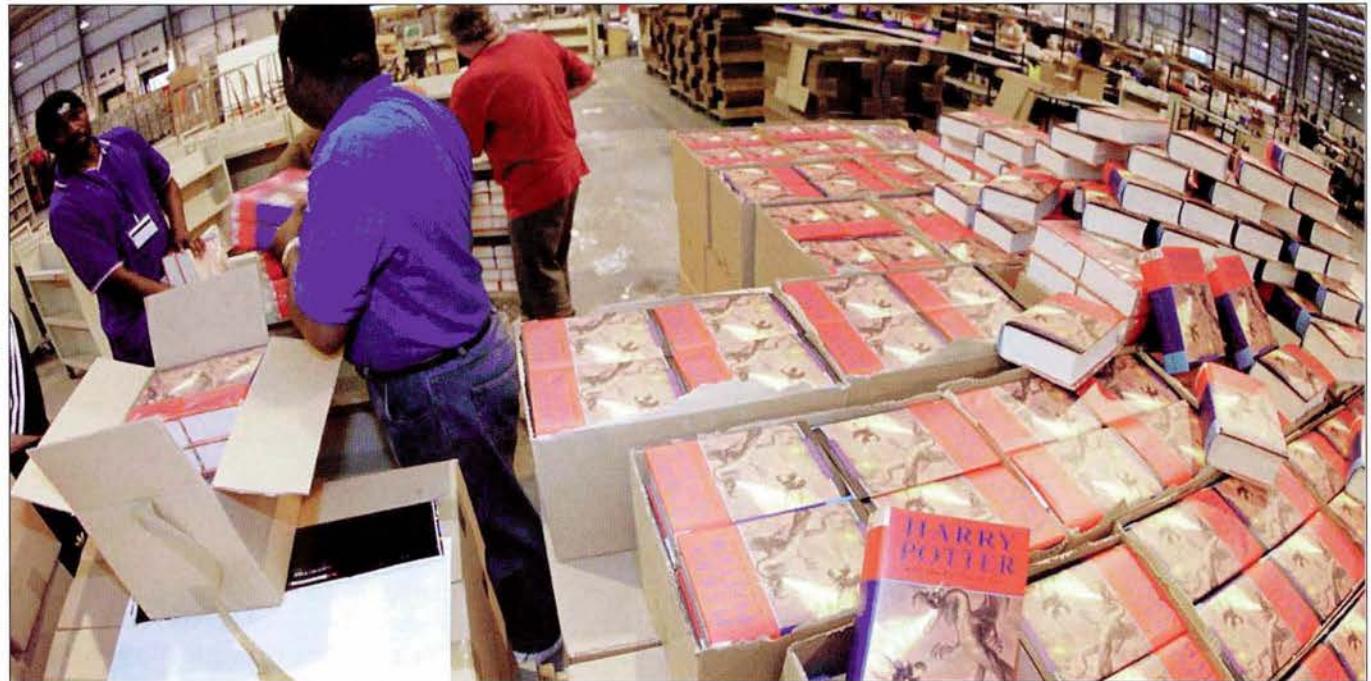


Photo: Reuters

Online shopping: are we being green enough?

At first glance, Internet-based shopping seems to have benefits for both the consumer and the environment. Consumers believe they are getting better prices and greater convenience. Environmentalists believe that transportation and collateral costs are reduced because there are fewer trips to shopping malls. But are they right?

In practice, shoppers in the physical world bundle their errands together. The marginal effect on, say, traffic, of buying a book at the mall is small if, as part of the trip, other items are bought

or other things are done, such as picking up the kids.

That there is a social cost there is no doubt, but the wider effect of ordering products over the Internet is not zero. Take energy for instance: estimates for 1998 of the electricity cost of operating Internet routers, switches and computers range from 1% of total US energy use to an impressive 8%. Electricity generation is one of the largest national sources of many pollutants. Moreover, the manufacture of computers and related equipment consumes substantial amounts of

energy too. And it involves significant amounts of toxic materials as well. Many e-commerce companies build their own regional warehouses for storage and expedited transfer of their merchandise to shipping companies. The construction industry is one of the more energy-intensive industries, and the scale of warehouses being built (in the order of hundreds of thousands of square meters) adds pollution and waste and devours open space.

True, improvements in design, energy efficiency and manufacturing processes are being made. But

e-commerce has its negative effects nonetheless. So where are the gains?

E-wizardry

Last July, Amazon.com, the leading online retailer, partnered with FedEx, a top global courier service, to deliver more than a quarter of a million copies of *Harry Potter and the Goblet of Fire* to

of empty shipping boxes and packaging that would wind up in landfills, let alone the energy used – and transport pollution caused – in the deal.

Most orders were probably shipped in single boxes, not as part of larger orders. The total package weighed

customer and ship them together. Similarly, if a customer buys two books from the local bookstore, then the effective impacts from the car trip are halved on a per-book basis. Further, the ability to cross-sell other products (in both traditional and online systems) holds the potential of increasing revenues without making

The venture set a record for the online provision of goods in volume. It also probably set a record for the quantities of empty shipping boxes and packaging that would wind up in landfills, let alone the energy used – and transport pollution caused – in the deal.

readers across the United States. As a showcase of their combined shipping prowess, Amazon.com announced that all pre-orders of the *Harry Potter* book would receive free Saturday delivery by FedEx. Thus, customers got books (which, incidentally, were shipped at a 40% discount), only a few hours after the midnight Friday embargo imposed by the publisher. Press releases from FedEx trumpeted the fact that the deliveries required a dedicated fleet of 100 airplanes and 9,000 trucks. The venture set a record for the online provision of goods in volume. It also probably set a record for the quantities

1.5kg, with the book itself at 1.1 kg. These packages travelled by air and truck. Per ton-mile, air transit costs three times as much and uses about five times as much fuel as trucking. Rail and water shipping are even cheaper and less polluting, but are clearly unsuitable for fast delivery.

In fact, the total costs of delivering books via a web-based retailer like Amazon.com and a traditional bookstore are comparable. However, when private car trips to bookstores and return shipments of unsold inventory are included, the total

system-wide costs of the “traditional retailer” model are nearly double those of the Internet-based ones. These significant savings partly justify the deep discounts offered by web booksellers. It is also possible to understand the relative importance of “upselling”, since more savings are possible if a web company is able to sell two books to a

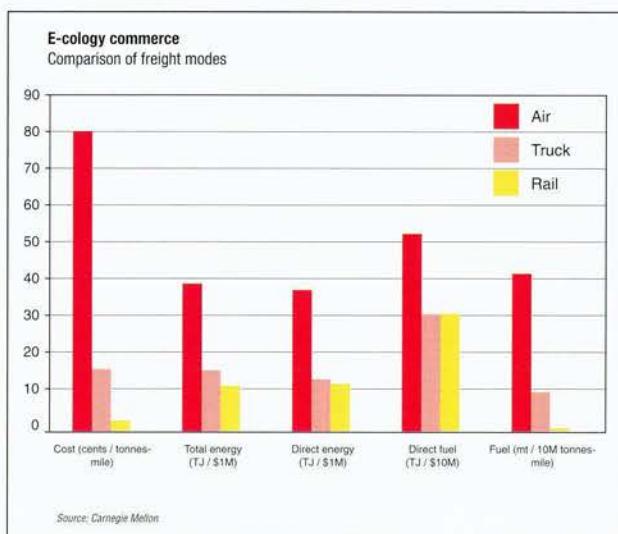
the environmental damage worse. For example, a mother buying a new (low profit-margin) *Harry Potter* book at the local bookstore might grab a high-margin cappuccino while waiting in line.

Online bookstores are not the only example of a new system with uncertain net effects. Online grocers are expanding too, with miniature logistics networks in many large cities.

Green choices

While *Harry Potter* cannot be branded as a major contributor to global climate change, the actual effects of current e-commerce systems remain at best unclear, and consumers seem unaware of the trade-offs. After all, while clicking at our PCs, we don't think of mountains of packaging materials at the landfills, increased emissions or reduced open space.

E-commerce is still in its infancy and it is perhaps difficult to believe that our much treasured individualism — to “drive to work alone”, and “to order items online and have them shipped overnight” — is contributing to congestion on our nation's highways and in our skies.



Yet, personal consumption choices and some emerging new services may be made greener, without significantly sacrificing customer service and convenience.

One new option for delivering parcels, for instance, is a service that lets customers choose the day and time for receiving their shipment. This feature might allow the local carrier to consolidate delivery trips, reducing the number of trips made and leading to improved environmental performance.

Several companies are considering becoming pickup locations for parcel deliveries. For example, the local video or grocery store could become the shipping address. Customers would stop in and pick up their online purchases the next time they drive past, and, the store hopes, rent a movie at the same time.

Internet companies could help by more effectively marketing such shipping options to consumers. They can help consumers save money, and better recognise the impacts of their purchasing decisions, by explaining the trade-off between delivery time and cost. After all, while items like groceries have to be delivered promptly, books, CDs and videos can probably wait. In other words, the "overnight" e-commerce mantra might be doing more harm than good. ■

References

- ◆ Visit Carnegie Mellon's Green Design Initiative at <http://gdi.ce.cmu.edu/>, a research consortium aimed at solutions for businesses interested in reducing non-renewable resources and toxic materials in products.
- ◆ This article is based on a longer article by the same authors and published in iMP, the web-based magazine of the Center for Information Strategy and Policy at www.cisp.org. It was prepared specially for *OECD Observer*.

Cautionary tale

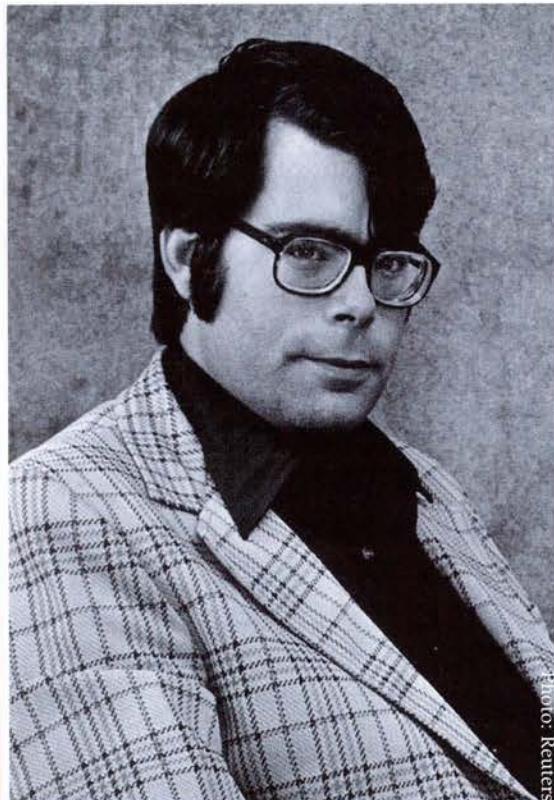


Photo: Reuters

Still waiting for payment

Publishing online may seem an attractive alternative to shipping books around the globe, but the problems of the physical universe have a nasty habit of catching up, as author Stephen King (above) has found.

Six months after launching serial publication of *The Plant* on the web Mr King, who penned such bestsellers as *The Shining* and *The Green Mile*, announced he was suspending the experiment for the foreseeable future. The reason? Partly time pressure – Mr King has several novels to complete for print

publication. Also, the author says on his official web site, "my agent insists I need to take a breather so that foreign translation and publication of *The Plant* – also in instalments, also on the Net – can catch up with American publication." And then there is the question of payment. Mr King set up a pay-as-you-go system which depended on readers' honesty in forwarding \$1-2 for each episode they downloaded.

Mr King originally promised to publish two monthly episodes, and to continue with a third "if response is good and the pay-through equals or exceeds 75%." The pay rate for the first three

episodes was 75-80%, but "has fallen off radically with Part 4. In fact, the numbers have dropped below 50%," the author said in a statement announcing the suspension of publication. As a Thank You to those who did pay for the first three episodes, Mr King said they would get part six of *The Plant* for free. This gesture may console the readers, but what it means for the future of web book publishing is another question.

References

- ◆ Visit Stephen King's web site at <http://www.stephenking.com/>
- ◆ The OECD's electronic commerce web site is at http://www.oecd.org/subject/e_commerce/

Teachers need more IT schooling

OECD ROUNDTABLE, AIX-EN-PROVENCE, FRANCE, 8-9 DECEMBER 2000

Teachers need more training in new technologies but should not be replaced by computer terminals, students from OECD countries told educational policymakers at a meeting in December. The 28 students, aged 17-20, were worried that many teachers were ignorant not only of the technical aspects of the new technologies, but also about how to use them as an effective learning tool. This can lead to tension between self-directed learning using computers at home and activity within school, the students told the meeting, which was one of the first of its kind, set up to get students' views on new technology in education. The students also raised the question of the quality of the information being provided via new technologies. They said many CD-ROMs cover a subject with great breadth but not depth, and that

much time can be wasted searching on the Internet, with no guarantee of the authenticity of the information recovered. And while computers provide enormous learning potential when used wisely, they do not and should not displace books, teachers and basic human interactions.

Another key area of discussion was how to help those less privileged than themselves – these students were accustomed to using a computer for educational purposes at school and at home and had been in touch electronically for the past year. They applauded moves to keep schools open for long hours as community ICT resources, but drew attention to the problems of vandalism and organised theft that stood in the way in some countries. Many of the students were prepared to accept at least some responsibility

for helping their less able peers to become computer literate, recognising that in helping others they would also be strengthening their own understanding.

The work with students is part of an international OECD project, ICT and the Quality of Learning. The results of the meeting in Aix-en-Provence, France will be published. The balance and awareness within the views the students expressed was itself justification for them to become more overtly part of the decision-making process – although one, in a moment of candour, indicated that they had not really expected their views to be taken seriously. ■

Reference

- ◆ See the article by Edwyn James in the Society and Government section.

Stormy weather

GLOBAL WARMING, UNFCCC CONFERENCE OF THE PARTIES, COP 6, THE HAGUE, THE NETHERLANDS, 13-24 NOVEMBER 2000

How can countries stop global warming? Not easy, according to many (see News brief). Countries have to meet their Kyoto Protocol greenhouse gas reduction targets for a start. And OECD data and expertise can support countries in their efforts to meet these targets, OECD environment director Joke Waller-Hunter told the COP-6

climate change conference in The Hague in November 2000. Recent OECD analysis, for example, has found that working to reduce emissions across the greenhouse gases, that is CO₂, CH₄ and N₂O, rather than CO₂ alone, would cut the costs of mitigation in the OECD by about a third. The OECD is also investigating and contributing to international work on the

connection between greenhouse gas limitation and other policy objectives, such as protecting human health and ecosystems.

An OECD study published for the Hague meeting, "Emission Baselines: Estimating the Unknown", looks at how to set environmentally credible baseline levels for project-based mechanisms

in the development of markets for greenhouse gas reductions under the Kyoto Protocol. The study provides an in-depth look at four key sectors: electricity; cement; energy efficiency; and iron and steel.

For the future, Ms Waller-Hunter said the OECD would be taking a careful look at the relationship between climate change and sustainable development strategies

in OECD countries as well as in developing countries. It will consider how OECD members can help developing countries build capacity to address the interconnections between development and climate change. ■

References

- ◆ Visit the UN climate change convention website at <http://www.unfccc.int/>
- ◆ Find out more about OECD's work on climate change at

<http://www.oecd.org/env/cc/index.htm>

◆ OECD, *Emission Baselines: Estimating the Unknown*, Paris 2000 (individual papers also available online)

◆ OECD, *Ancillary Benefits and Costs of GHG Mitigation, Proceedings of an IPCC Co-sponsored Workshop*, 27-29 March 2000, Paris 2000 (individual papers also available online)

◆ See article by Joke Waller-Hunter, 2000: A clearer view for the environment, *Observer* 221/222 Summer 2000,
<http://www.oecdobserver.org>

Coming in from the cold

OPPORTUNITY FOR ALL – BEST PRACTICES IN TACKLING POVERTY AND SOCIAL EXCLUSION, LONDON, 9-10 OCTOBER 2000

We have to work even harder to tackle social exclusion and poverty so that the digital revolution does not make it even more difficult for the most disadvantaged members of our societies to get out of poverty and into lasting employment. This was the message ministers from OECD countries heard at a meeting in London in October to discuss the best way to tackle exclusion, and particularly how to get the long-term unemployed back into the labour force.

OECD's director for education, employment, labour and social affairs, John Martin, told the meeting that making work pay policies in countries such as the United States and the United Kingdom had the advantage of tackling both unemployment and poverty simultaneously. But he

warned that they were not a panacea for all the problems faced by the most excluded sectors of society, and said they seemed to work best in countries with a minimum wage.

John Evans of the Trade Union Advisory Committee to the OECD (TUAC) stressed that poverty had switched from being essentially a problem for the elderly to one of young and single-parent households in many countries. He said that policies should not focus only on getting people back into work, but also getting them out of poverty.

The conference discussed how to prepare people to get back into the job market and stay there, from training to social and health problems. It also considered how best to tackle problems focused on

geographical areas such as remote rural communities, or particular sectors of society such as new immigrants or ethnic minorities. And it stressed the need for coherent strategies to deal with poverty, since the problem cuts across age groups and areas of government responsibility. Avoiding poverty as a pensioner, for example, can depend on having had the jobs to build up pension rights during a working life. Poverty in childhood can be the start of a vicious circle of poverty in later life. ■

References

- ◆ See more about the conference at <http://www.oecd.org/subject/poverty/>
- ◆ Find out more about the OECD's work on education, employment and social issues at <http://www.oecd.org/els/>
- ◆ OECD, *What Works in Innovation in Education: Motivating Students for Lifelong Learning*, Paris 2000.

Women in equality

WOMEN ENTREPRENEURS IN SMEs, PARIS, 29-30 NOVEMBER 2000

Women's role in every area of life from property ownership and jobs to waste disposal was under the spotlight at a gender mainstreaming conference co-organised at OECD headquarters in Paris by the OECD and the Nordic council of ministers.

Some 300 people attended the ministerial-level conference on ways to ensure that gender issues are taken into account in a systematic way by governments, business and other institutions when making policy and analysing events. The aim of gender mainstreaming is to achieve equality between women and men in all areas of decision-making in both the public and private sectors.

A questionnaire filled out by 16 OECD member governments for the conference highlighted the wide range of concerns included under the gender heading. While New Zealand noted that it wanted to increase its ratio of female legislators from the current 30%, the Czech Republic listed its two gender priorities for the coming year as equality for men and women in employment, and protecting women against violence.

A tipsheet for improving gender equality produced by Sweden's international development agency illustrated how the concerns of men and women must be taken into account across all areas of life, down to disposal of household rubbish. Men might think one central waste disposal point is enough, but women, who generally have heavier workloads and less time to spare, might find it more convenient to use smaller sites nearer to home, the Swedish report said.

The gender mainstreaming conference was followed within the week by an OECD conference on women entrepreneurs in small and medium-sized enterprises (SMEs). This looked at problems such as difficulties for women in obtaining finance to start up or expand a business, and ways for women entrepreneurs to develop trade networks and become involved in international trade. ■

Reference

- ◆ For more information on OECD work in gender mainstreaming, contact Francesca.Cook@oecd.org

Calendar of upcoming events 2001

Please note that many of the meetings mentioned are not open to the public or the media and are listed as a guide only. All meetings are in Paris unless otherwise stated. For further information please contact the Media Relations Division or consult the OECD web site at <http://www.oecd.org/media/upcoming.htm> which is updated weekly.

JANUARY 2001 Some highlights

15-17 Electronic Commerce conference organised by the CCNM Emerging Market Economy Forum and STI, Dubai, United Arab Emirates.

17 Aid Effectiveness, seminar organised by the DAC and the Development Centre.

17-18 Insurance Regulation in Asia, conference organised by the Programme for Emerging Asian Economies/CCNM, and DAF Kuala Lumpur, Malaysia.

23-25 Local Clusters – Local Networks of Enterprises in the World Economy, world congress organised by TDS/LEED. La Villette, Paris. On 25 January, participants are invited to visit local clusters from Ile de France (Seine-Saint-Denis).

24-25 Holding the Executive Accountable: The Changing Role of Parliament in the Budget Process, meeting organised by the Public Management Service (PUMA).

Calendar

oecd.org

25-26 The Creation of Markets for Biodiversity Products and Services, an international OECD/World Bank Institute workshop, organised by the Environment Directorate.

25-30 World Economic Forum. Davos, Switzerland.

29-30 Foreign Direct Investment and Environment: Lessons from Mining and Forestry Industries, meeting organised by the Environment Directorate. The Hague, Netherlands.

February

1-2 Migration and the Labour Market, meeting organised by the Japan Institute of Labour and the Japan Ministry of Labour, with the participation of the OECD/ELS and the ILO. Tokyo, Japan.

5-7 Natural Disasters, international conference organised by the Japanese National Land Agency and TDS. Kobe, Japan.

21-23 Co-operative Initiative on Regulatory Reform, initial meeting organised by the Asia Pacific Economic Co-operation (APEC) and the OECD Public Management Service (PUMA). Singapore.

23 Firms, Workers and the Changing Workplace: Considerations for the Old and the New Economy, joint meeting of Management and Trade Union Experts, organised by the Labour/Management Programme.

26-27 Transport Policies in the Countries of Central and Eastern Europe, A Decade of Integration: Results and New Challenges, forum organised by the European Conference of Ministers of Transport (ECMT).

March

1-2 The Role of Tourism Policies in Development: Measures Implemented to Promote the Liberalisation of Tourism and Investment, seminar organised by STI.

5-6 Development Programmes to Bridge the Digital Divide, joint OECD-DAC/UNDP/World Bank Global Forum.

12 Protecting Consumers in the Online Marketplace, joint OECD-Private Sector Workshop organised by STI. Berlin, Germany.

12-14 Private Pension Reform in Brazil, conference organised by DAF and CCNM. Rio de Janeiro, Brazil.

26-30 Exchange of Information and Bank Secrecy, joint OECD/CEMAC seminar organised by CCNM/DAF. Yaoundé, Cameroon.

April

2-4 OECD Education Ministers meeting.

23-24 Corporate Governance in Developing Countries and Emerging

Economies, policy dialogue organised by the Development Centre.

May

14-16 OECD Forum 2001: Sustainable Development in the New Economy.

16 OECD Environment Ministers meeting.

17-18 Annual OECD Council Meeting at Ministerial Level.

New publications

October 2000-January 2001

ORDER FORM AT THE END OF THE ISSUE. All publications available in paper and electronic book format. This is a selected list. For more titles, please consult www.oecd.org/bookshop

Agriculture and food

Income Risk Management in Agriculture
OECD Code: 51 2000 12 1P1
ISBN: 92-64-18534-8
December 2000, 152 pages, 29 tables, 23 charts
FF300 US\$42 DM89 £28 ¥4,550

International Standardisation of Fruit and Vegetables
Broccoli
OECD Code: 51 2000 13 3P1
ISBN: 92-64-08538-6
October 2000, 22 pages
FF130 US\$20 DM39 £12 ¥2,050

Development and aid

DAC Journal, Volume 2, 2001
Development Co-operation Report 2000
OECD Code: 43 2001 31 1P1
ISBN: 92-64-19000-7
January 2001, 200 pages, 8 tables, 22 charts
FF295 US\$49 DM90 £30 ¥5,650

Geographical Distribution of Financial Flows to Aid 2001 Edition
OECD Code: 43 2001 01 3P1
ISBN: 92-64-08617-X
January 2001, 321 pages, 288 tables
FF460 US\$64 DM137 £42 ¥6,920

Development Centre Seminars
Sustainable Recovery in Asia: Mobilising Resources for Development
OECD Code: 41 2000 09 1P1
ISBN: 92-64-18546-1
November 2000, 192 pages, 16 tables, 8 charts
FF300 US\$42 DM89 £28 ¥4,550

Economics

OECD Economic Outlook No. 68
OECD Code: 12 2000 68 1P1
ISBN: 92-64-17554-7
December 2000, 290 pages, 87 tables, 67 charts
FF310 US\$55 DM95 £32 ¥6,000
The European Union's Trade Policies and their Economic Effects
OECD Code: 11 2000 18 1P1
ISBN: 92-64-18536-4
January 2001, 84 pages, 21 tables, 8 charts
FF130 US\$20 DM39 £12 ¥2 000

OECD Economic Surveys: Japan 1999/2000
OECD Code: 10 2000 03 1P1
ISBN: 92-64-17503-2
December 2000, 220 pages, 30 tables, 76 charts
FF185 US\$30 DM55 £19 ¥3,550

Education

Where are the Resources for Lifelong Learning?
OECD Code: 91 2000 03 1P1
ISBN: 92-64-17677-2
October 2000, 140 pages, 38 tables
FF170 US\$26 DM51 £16 ¥2,700

Cities and Regions in the New Learning Economy
OECD Code: 96 2000 11 1P1
ISBN: 92-64-18568-2
January 2001, 150 pages, 14 tables
FF260 US\$36 DM78 £24 ¥3,850

Reviews of National Policies for Education: Tertiary Education and Research in the Russian Federation
OECD Code: 91 1999 02 8P1
ISBN: 92-64-87042-3
October 2000
14 tables, 4 charts
FF220 US\$38 DM66 £23 ¥4,450

Energy

World Energy Outlook 2000
OECD Code: 61 2000 17 1P1
ISBN: 92-64-18513-5
November 2000, 150 pages
FF1,065 US\$150 DM318 £98 ¥16,100

CO2 Emissions from Fuel Combustion 1971/1998
OECD Code: 61 2000 10 3P1
ISBN: 92-64-08506-8
October 2000, 500 pages
FF1,065 US\$150 DM318 £98 ¥16,050

Energy Policies in Sweden
OECD Code: 61 2000 19 1P1
ISBN: 92-64-18523-2
October 2000, 100 pages
FF525 US\$75 DM157 £49 ¥8,400

France
OECD Code: 61 2000 24 1P1
ISBN: 92-64-18556-9
November 2000, 100 pages
FF525 US\$75 DM157 £49 ¥8,400

Dealing with Climate Change Policies and Measures in IEA Member Countries
OECD Code: 61 2000 28 1P1
ISBN: 92-64-18560-7
November 2000, 170 pages
FF700 US\$100 DM209 £65 ¥10,800

The Road from Kyoto: Current CO2 and Transport Policies in the IEA
OECD Code: 61 2000 29 1P1
ISBN: 92-64-18561-5
November 2000, 120 pages
FF525 US\$75 DM157 £49 ¥8,100

New publications

oecd.org

Energy

Energy Technology and Climate Change: A Call to Action
OECD Code: 61 2000 31 1P1
ISBN: 92-64-18563-1
November 2000, 100 pages
FF525 US\$75 DM157 £49 ¥8,100

Nuclear Development
Nuclear Power Plant Life Management in a Changing Business World
Workshop Proceedings
OECD Code: 66 2000 32 1P1
ISBN: 92-64-18429-5
December 2000, 150 pages, 18 tables, 76 charts
FF375 US\$53 DM112 £35 ¥5,680

Environment

Emission Baselines: Estimating the Unknown
OECD Code: 97 2000 13 1P1
ISBN: 92-64-18543-7
November 2000, 292 pages, 55 tables, 32 charts
FF700 US\$100 DM209 £65 ¥10,800

Ancillary Benefits and Costs of Greenhouse Gas Mitigation
OECD Code: 97 2000 12 1P1
ISBN: 92-64-18542-9
November 2000, 596 pages
114 tables, 100 charts
FF480 US\$69 DM143 £44 ¥7,400

Financial, fiscal and enterprise affairs

No Longer Business as Usual: Fighting Bribery and Corruption
OECD Code: 21 2000 19 1P1
ISBN: 92-64-18530-5
November 2000, 250 pages
FF420 US\$65 DM125 £40 ¥6 800

Institutional Investors
Statistical Yearbook 2000 Edition
OECD Code: 21 2000 06 3P1
ISBN: 92-64-05902-4
October 2000, 288 pages, 80 tables, 34 charts
FF450 US\$65 DM134 £42 ¥6 950

Model Tax Convention on Income and on Capital Volumes I and II
OECD Code: 23 2000 54 1P1
ISBN: 92-64-17645-4
November 2000, 804 pages
FF1,200 US\$175 DM358 £111 ¥18,750

OECD Reviews of Foreign Direct Investment

Hungary
OECD Code: 21 2000 02 1P1
ISBN: 92-64-17633-0
October 2000, 76 pages, 18 tables, 7 charts
FF130 US\$20 DM39 £12 ¥2 100

Financial Market Trends No. 77

OECD Code: 27 2000 03 1P1
ISBN: 92-64-17560-1
October 2000, 128 pages, 10 tables, 10 charts
FF225 US\$45 DM70 £25 ¥4 450

OECD Journal of Competition Law and Policy

Volume 2, No 3
OECD Code: 24 2000 23 1P1
ISBN: 92-64-17584-9
October 2000, 236 pages, 13 tables, 3 charts
FF335 US\$60 DM105 £34 ¥7 500

Public management

Trust in Government
Ethics Measures in OECD Countries
OECD Code: 42 2000 06 1P1
ISBN: 92-64-18519-4
October 2000, 332 pages, 10 tables, 16 charts
FF440 US\$64 DM131 £41 ¥6,900

Government of the Future

OECD Code: 42 2000 08 1P1
ISBN: 92-64-18448-1
January 2001, 53 pages
FF130 US\$20 DM39 £12 ¥2,000

Statistics

OECD Statistics on International Trade in Services 1989/1998
OECD Code: 30 2000 07 3P1
ISBN: 92-64-08552-1
October 2000, 388 pages, 44 tables
FF500 US\$72 DM149 £46 ¥7,750

Revenue Statistics 1965/1999
OECD Code: 23 2000 05 3P1
ISBN: 92-64-05916-4
November 2000, 316 pages
201 tables, 44 charts
FF480 US\$69 DM143 £44 ¥7,400

Labour Force Statistics 1979/1999
OECD Code: 30 2000 10 3P1
ISBN: 92 64 08566 1
October 2000, 372 page, 320 tables
FF540 US\$75 DM161 £50 ¥8,000

Transport

Strategic Environmental Assessment for Transport
OECD Code: 752000071P1
ISBN: 92-82-11259-4
November, 2000, 96 pages, 10 tables, 4 charts
FF180 US\$26 DM54 £17 ¥2,800

Research on Transport Economics Volume 32 2000 Edition
OECD Code: 74 2000 01 3P1
ISBN: 92-82-10266-1
November 2000, 420 pages
FF700 US\$99 DM209 £65 ¥10,550

Labour market and social issues

Reforms for an Ageing Society
OECD Code: 81 2000 08 1P1
ISBN: 92-64-17687-X
November 2000, 220 pages
11 tables, 324 charts
FF250 US\$36 DM75 £23 ¥3,900

International Trade and Core Labour Standards

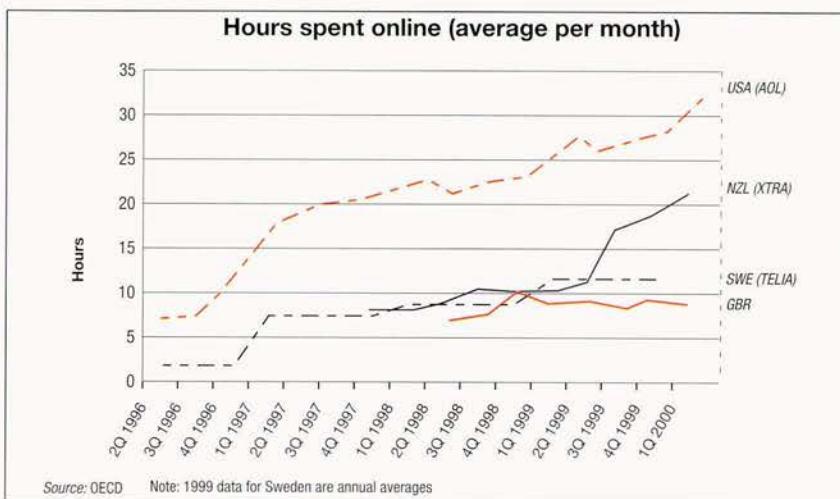
OECD Code: 22 2000 04 1P1
ISBN: 92-64-18535-6
October 2000, 124 pages, 7 tables, 4 charts
FF140 DM 20 DM42 £13 ¥2,150

Net time

By the end of 1999 there were more than 121 million Internet subscribers in OECD countries. There was quite likely more than double that number in users, with more than one user per PC, including at work. But how much time do people spend online? This is a key question in determining the accessibility of the Internet.

Not surprisingly, the answer seems to depend on the cost of a phone call: the average time spent online is far higher in countries such as New Zealand and the United States where there is unmetered access to the Internet.

Broadly speaking, in countries where metered telecommunication charges apply, average Internet usage generally falls within a band of five to nine hours per subscriber per month. The exception is Sweden where average



Phone numbers

Mobile phone growth in OECD countries shows no signs of slowing, although in several countries mobile phone use has already surpassed that of fixed-line phones. Finland led the field, with the number of mobile telephones surpassing that of fixed-line phones in Finnish households in 1998. By late 1999 several other countries had joined the list, including Korea, where the number of mobile phone subscribers had more than doubled in 1998. Portugal saw a similar increase. Interestingly, growth in mobile phone penetration increased markedly once the market was opened up to at least three competitors: in 1998, when

Greece went from two to three rival operators, the mobile penetration rate jumped from 8.6 to 19.5 mobile subscribers per 100 inhabitants. The number of mobile subscribers per 100 inhabitants for the OECD as a whole was 32.5, or almost one in three people, by the end of 1999. The gap between Finland, with 65 subscribers per 100 people, and Mexico, with 8, remained wide, however.

There are some perhaps surprising names near the bottom of the list. The United States and Germany are among the nine countries with mobile penetration below the OECD overall level, with 31.5 US subscribers and 28.6 German subscribers per 100 population. ■

usage was up to 12 hours per subscriber per month in 1999.

For contrast, take the United States, where the average America Online (AOL) Internet user stayed online for 32 hours per month by mid-2000. Another example is Telecom New Zealand, which reported that average monthly use had approached 20 hours per subscriber by the end of 1999. In both these cases, usage began to increase following the introduction of unmetered Internet access. Prior to this the average use of AOL and Telecom New Zealand did not exceed the average use in those countries with metered charges. By the end of 1999, New Zealand Internet users were spending an average 19 hours online per month for an average 14.1 subscribers per 100 population. In Switzerland there were nearly as many subscribers – 12.6 per 100 people, but they were spending only 7.82 hours a month online. Initial indications from countries where unmetered access was introduced in 2000, such as the United Kingdom, show that online usage patterns are beginning to follow those of New Zealand and the United States. ■

Mobile subscribers per 100 inhabitants, 1999

Finland	65.0
Iceland	63.0
Norway	61.8
Sweden	57.6
Italy	52.5
Austria	52.0
Korea	50.0
Denmark	49.4
Luxembourg	48.9
Portugal	46.8
Japan	44.9
Netherlands	43.3
Ireland	42.7
Switzerland	41.2
United Kingdom	40.3
Australia	39.5
Greece	38.2
Spain	37.8
France	34.9
New Zealand	32.9
OECD	32.4
United States	31.5
Belgium	31.2
Germany	28.6
Canada	22.7
Czech Republic	18.9
Hungary	16.2
Turkey	11.8
Poland	10.1
Mexico	7.9

Source: OECD Communications Outlook 2001

Indicators

databank

			% change from:		Current balance	level:			
			previous period	previous year		current period	same period last year		
	Australia	Gross domestic product	Q2 00	0.7	4.7	Current balance	Q3 00	-3.13	-6.18
		Leading indicator	Sep. 00	1.1	-1.8	Unemployment rate	Oct. 00	6.3	7.1
		Consumer price index	Q3 00	3.7	6.1	Interest rate	Oct. 00	6.41	5.31
	Austria	Gross domestic product	Q2 00	0.7	3.9	Current balance	Sep. 00	-0.18	-0.85
		Leading indicator	Oct. 00	-0.1	4.6	Unemployment rate	Oct. 00	3.2	3.6
		Consumer price index	Oct. 00	0.2	2.8	Interest rate*	..	..	..
	Belgium	Gross domestic product	Q2 00	0.2	4.5	Current balance	Q2 00	2.35	2.88
		Leading indicator	Oct. 00	1.3	0.8	Unemployment rate	Oct. 00	8.5	8.9
		Consumer price index	Nov 00	0.3	3.1	Interest rate*	..	..	..
	Canada	Gross domestic product	Q3 00	1.2	5.0	Current balance	Q3 00	4.70	2.18
		Leading indicator	Oct. 00	-0.8	2.4	Unemployment rate	Oct. 00	6.9	7.1
		Consumer price index	Oct. 00	0.2	2.8	Interest rate	Nov. 00	5.86	5.03
	Czech Rep.	Gross domestic product	Q2 00	..	1.9	Current balance	Q1 00	-0.35	-0.32
		Leading indicator	..	..	..	Unemployment rate	Q2 00	8.9	8.7
		Consumer price index	Oct. 00	0.3	4.3	Interest rate	Oct. 00	5.39	6.18
	Denmark	Gross domestic product	Q2 00	1.1	3.6	Current balance	Aug. 00	0.29	0.36
		Leading indicator	Sep. 00	-0.5	1.4	Unemployment rate	Sep. 00	5.0	5.1
		Consumer price index	Oct. 00	0.2	2.7	Interest rate	Oct. 00	5.43	3.70
	Finland	Gross domestic product	Q2 00	0.3	4.5	Current balance	Sep. 00	1.28	0.90
		Leading indicator	Jul. 00	2.5	7.7	Unemployment rate	Oct. 00	9.6	10.0
		Consumer price index	Oct. 00	0.1	4.1	Interest rate*	..	..	..
	France	Gross domestic product	Q3 00	0.7	3.1	Current balance	Aug. 00	1.05	1.57
		Leading indicator	Oct. 00	-0.5	-1.1	Unemployment rate	Oct. 00	9.3	10.9
		Consumer price index	Oct. 00	-0.2	1.9	Interest rate*	..	..	..
	Germany	Gross domestic product	Q3 00	0.6	3.4	Current balance	Sep. 00	-2.57	-2.68
		Leading indicator	Oct. 00	0.0	3.5	Unemployment rate	Oct. 00	8.2	8.7
		Consumer price index	Oct. 00	-0.2	2.4	Interest rate*	..	..	..
	Greece	Gross domestic product	1999	..	3.4	Current balance	Aug. 00	0.05	0.13
		Leading indicator	Oct. 00	-2.9	-0.4	Unemployment rate	..	..	..
		Consumer price index	Oct. 00	1.2	4.1	Interest rate	Nov. 00	6.30	11.00
	Hungary	Gross domestic product	1999	..	4.4	Current balance	Sep. 00	-0.27	-0.09
		Leading indicator	..	..	..	Unemployment rate	Q2 00	6.7	7.0
		Consumer price index	Oct. 00	0.7	10.4	Interest rate	Oct. 00	11.10	14.00
	Iceland	Gross domestic product	1999	..	4.3	Current balance	Q1 00	-0.18	-0.11
		Leading indicator	..	..	..	Unemployment rate	Oct. 00	1.1	1.7
		Consumer price index	Nov. 00	0.3	4.6	Interest rate	Oct. 00	11.75	9.48
	Ireland	Gross domestic product	1999	..	9.8	Current balance	Q2 00	0.28	0.14
		Leading indicator	Oct. 00	-1.9	-2.1	Unemployment rate	Oct. 00	4.2	5.3
		Consumer price index	Oct. 00	0.7	6.8	Interest rate*	..	..	..
	Italy	Gross domestic product	Q3 00	0.5	2.4	Current balance	Aug. 00	0.72	1.66
		Leading indicator	Oct. 00	-0.8	0.2	Unemployment rate	Jul. 00	10.5	11.3
		Consumer price index	Nov. 00	0.3	2.7	Interest rate*	..	..	..
	Japan	Gross domestic product	Q3 00	0.2	1.4	Current balance	Sep. 00	13.49	10.57
		Leading indicator	Sep. 00	0.4	4.0	Unemployment rate	Oct. 00	4.7	4.6
		Consumer price index	Oct. 00	0.1	-0.9	Interest rate	Nov. 00	0.56	0.34
	Korea	Gross domestic product	Q3 00	3.3	9.3	Current balance	Oct. 00	1.17	2.03
		Leading indicator	..	..	..	Unemployment rate	Oct. 00	3.9	5.1
		Consumer price index	Nov. 00	-0.4	2.6	Interest rate	Oct. 00	7.00	7.30

			% change from:			level:	
			previous period	previous year		current period	same period last year
	Luxembourg	Gross domestic product	1999	..	7.5	Current balance	..
		Leading indicator	Oct. 00	1.0	4.7	Unemployment rate	Oct. 00
		Consumer price index	Oct. 00	0.3	3.4	Interest rate*	..
	Mexico	Gross domestic product	Q2 00	2.0	8.0	Current balance	Q2 00
		Leading indicator	Oct. 00	1.0	6.7	Unemployment rate	Oct. 00
		Consumer price index	Oct. 00	0.7	8.9	Interest rate	Oct. 00
	Netherlands	Gross domestic product	Q3 00	0.8	3.6	Current balance	Q3 00
		Leading indicator	Oct. 00	1.0	1.6	Unemployment rate	Sep. 00
		Consumer price index	Oct. 00	0.3	3.1	Interest rate*	..
	New Zealand	Gross domestic product	Q2 00	-0.9	4.6	Current balance	Q2 00
		Leading indicator	..	..	..	Unemployment rate	Q2 00
		Consumer price index	Q3 00	1.4	3.0	Interest rate	Oct. 00
	Norway	Gross domestic product	Q2 00	-0.2	3.4	Current balance	Q3 00
		Leading indicator	Sep. 00	0.4	2.3	Unemployment rate	Q2 00
		Consumer price index	Oct. 00	0.1	3.1	Interest rate	Oct. 00
	Poland	Gross domestic product	1999	..	4.2	Current balance	Aug. 00
		Leading indicator	..	..	..	Unemployment rate	Oct. 00
		Consumer price index	Oct. 00	0.8	9.9	Interest rate	Oct. 00
	Portugal	Gross domestic product	Q4 98	0.7	3.7	Current balance	Q3 00
		Leading indicator	Sep. 00	1.8	2.1	Unemployment rate	Oct. 00
		Consumer price index	Oct. 00	0.4	3.5	Interest rate*	..
	Spain	Gross domestic product	Q2 00	0.9	3.9	Current balance	Aug. 00
		Leading indicator	Oct. 00	-0.4	1.1	Unemployment rate	Oct. 00
		Consumer price index	Oct. 00	0.3	4.0	Interest rate*	..
	Sweden	Gross domestic product	Q2 00	1.1	4.0	Current balance	Sep. 00
		Leading indicator	Sep. 00	0.7	4.7	Unemployment rate	Oct. 00
		Consumer price index	Oct. 00	0.2	1.1	Interest rate	Nov. 00
	Switzerland	Gross domestic product	Q2 00	0.6	3.9	Current balance	Q2 00
		Leading indicator	Oct. 00	0.3	2.8	Unemployment rate	Oct. 00
		Consumer price index	Nov. 00	0.5	1.9	Interest rate	Oct. 00
	Turkey	Gross domestic product	Q3 00	..	7.1	Current balance	Q3 00
		Leading indicator	..	..	..	Unemployment rate	Q3 00
		Consumer price index	Nov. 00	3.7	43.8	Interest rate	Nov. 00
	United Kingdom	Gross domestic product	Q3 00	0.7	2.9	Current balance	Q2 00
		Leading indicator	Oct. 00	0.3	0.4	Unemployment rate	Aug. 00
		Consumer price index	Oct. 00	-0.1	3.1	Interest rate	Nov. 00
	United States	Gross domestic product	Q3 00	0.7	5.3	Current balance	Q2 00
		Leading indicator	Oct. 00	-0.6	0.0	Unemployment rate	Oct. 00
		Consumer price index	Oct. 00	0.2	3.4	Interest rate	Nov. 00
	Euro zone	Gross domestic product	Q2 00	0.8	3.7	Current balance	Sep. 00
		Leading indicator	Oct. 00	-0.3	1.3	Unemployment rate	Oct. 00
		Consumer price index	Oct. 00	0.0	2.7	Interest rate	Nov. 00

Definitions and notes

Gross domestic product: Volume series, seasonally adjusted except for Czech Republic and Turkey; **Leading indicator:** A composite indicator, based on other indicators of economic activity (employment, sales, income, etc.), which signals cyclical movements in industrial production from six to nine months in advance; **Consumer price index:** Measures changes in average retail prices of a fixed basket of goods and services; **Current balance:** \$ billion; not seasonally adjusted except for Australia, the United Kingdom and the United States;

Unemployment rate: % of civilian labour force – standardised unemployment rate; national definitions for Iceland, Korea, Mexico, Poland, Switzerland and Turkey; seasonally adjusted apart from Turkey; **Interest rate:** Three months, except for Turkey (overnight interbank rate); .. not available; *Refer to Euro zone.

Source: Main Economic Indicators, OECD Publications, Paris, December 2000; Quarterly National Accounts database.

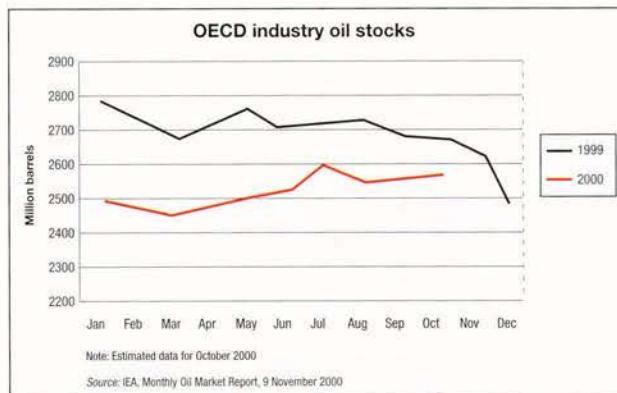
Scraping the oil barrel?

High oil prices have seen oil stocks in OECD countries shrink this year from 1999, touching levels last seen in 1996 when consumption was 6% lower than now. OPEC output by October was 15% higher than a year earlier, but this is unlikely to push prices down significantly before next year, the International Energy Agency (IEA) says. Moreover, another report, the OECD's six-monthly *Economic Outlook*, says that even if enough crude oil is available to meet demand this winter, there may be bottlenecks in delivering heating oil in some regions. But in the longer term,

prices are likely to come down substantially, averaging US\$21 a barrel in today's money in 2000-2010, before rising to US\$28 by 2020 due to a changing supply-demand balance, the

IEA says. But the OECD report warns that governments should be wary of reducing fuel taxes in response to public pressure over high oil prices. This would run counter to

environmental policy, given that if governments are to meet their greenhouse gas reduction targets, oil consumption will have to be reduced, and the easiest way to do this is to push the price up. ■



References

- ◆ OECD Economic Outlook, 2000.
 - ◆ IEA World Energy Outlook, 2000.
- Both available at
<http://www.oecd.org/bookshop>

Turkish inflation heads downwards

Turkey's inflation rate has fallen steadily since early 2000, with the adoption of a three-year stabilisation programme; and the target of single-digit inflation by the end of 2002 seems achievable, the OECD says in its latest six-monthly *Economic Outlook*. But the target of a consumer price increase of 25% in December is unlikely to be met, with

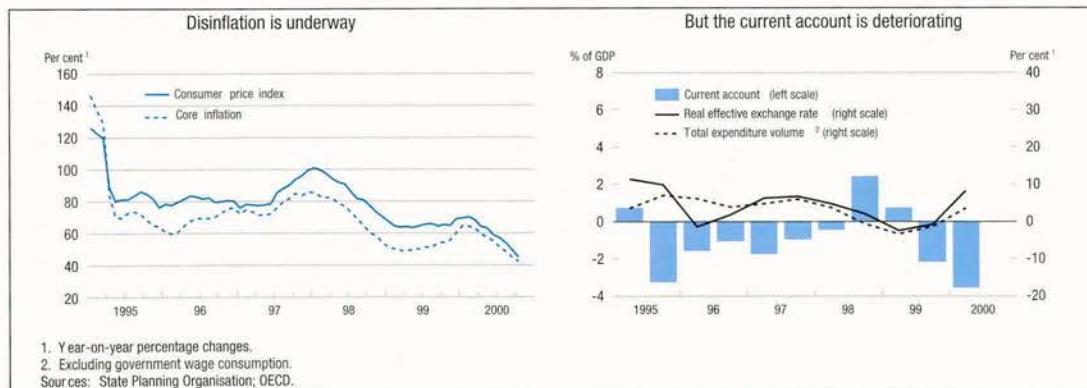
prices rising 43.8% in November from a year earlier.

The current inflation rate is still a far cry from five years ago, when consumer prices were rising at more than 120% a year and the core inflation rate was more than 140%. Domestic demand is expected to slow over the next two years, helping keep inflation down, and

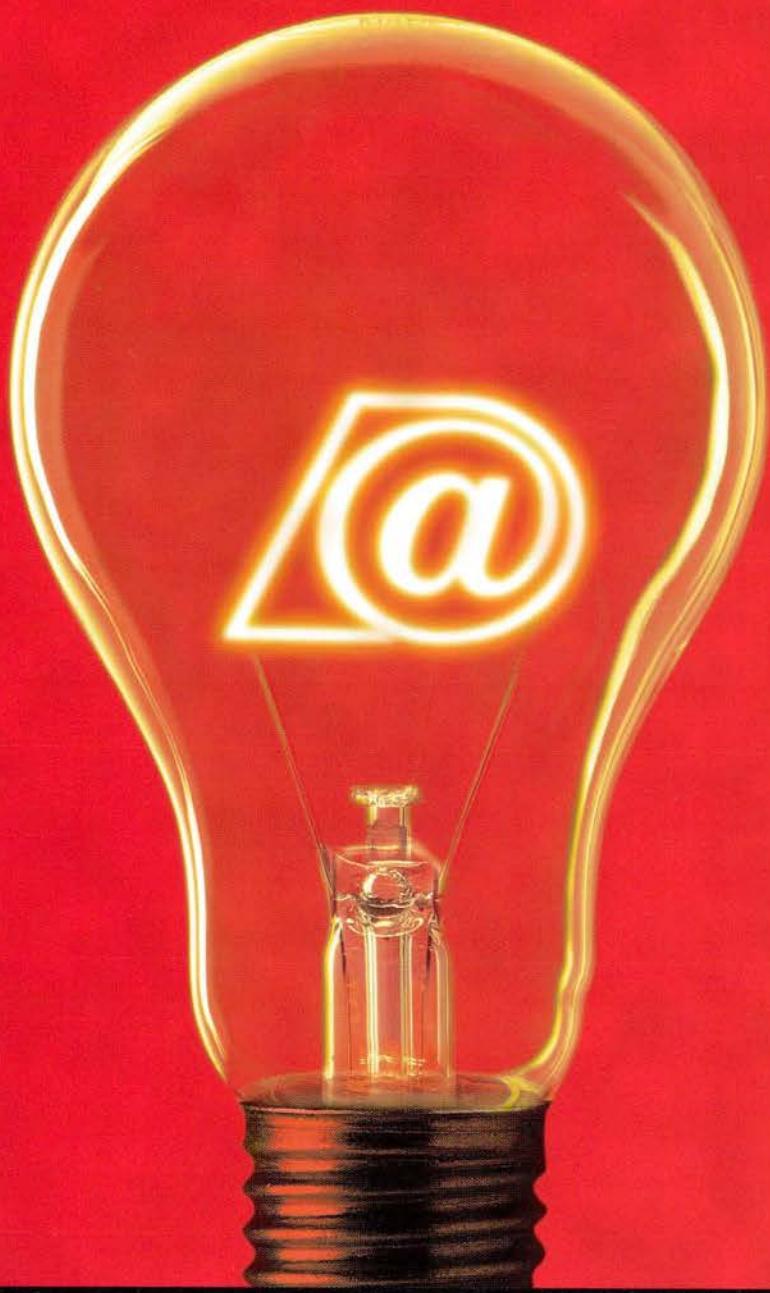
the chief risk on the inflation front is an overheating of demand, the *Outlook* said. There is also a danger that failure to keep wage increases in line with targets would boost inflation.

References

- ◆ OECD Economic Outlook no 68, 2000
- ◆ OECD Economic Surveys, Turkey 2000/2001, forthcoming, January 2001



The New Economy Hub @ Dubai

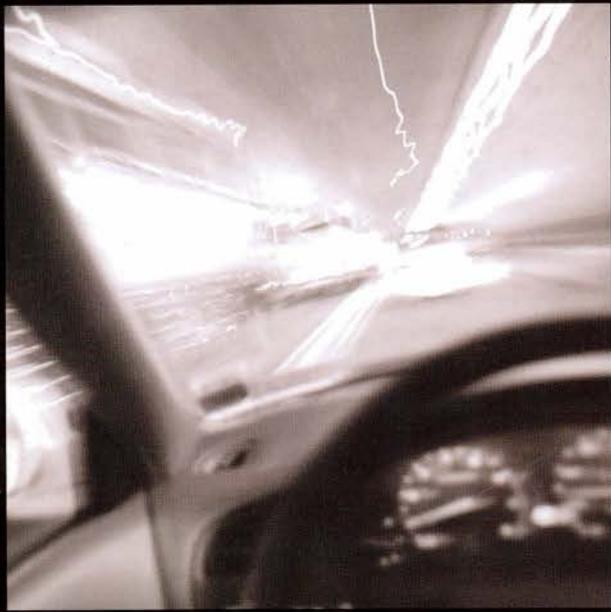


DUBAI INTERNET CITY

dubaiinternetcity.com

Shaping the Future of Business

SPEED



INTEROPERABILITY



SCALABILITY



ACCESSIBILITY



Microsoft .Net is a revolutionary new technology platform, designed to let your business harness the power of the internet to rapidly deploy its products and services in the new world of computing. Microsoft .Net provides the technology that will enable you to enjoy more personalised and productive relationships with your customers and partners.