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THE WORLD BANK

Washington, D.C.

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~~Speech Pre-Briefing: Wall Street Journal
Conference on Information Technology
(Wednesday, Sept 18, 1996)~~

~~Monday, September 16, 1996
5:30 - 6:00 pm
E1227 Conference Room~~

Wall Street Journal Conference
Information Technology
(JDW: One of the Keynote Speakers)

Wednesday, September 18, 1996
12:00 - 2:00 pm
The Willard Hotel

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R2002-036 Other #: 24 Box #: 186474B
President Wolfensohn - Briefings Books for Presidents Meetings - Meeting Material
Wall Street Journal Conference - Information Technology - September 18, 1996



30485733

Archive Management for the President's Office

Document Log

Reference # : Archive-00831

128

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A. CLASSIFICATION

- ☒ Meeting Material
- ☐ Trips
- ☐ Speeches

- ☐ Annual Meetings
- ☐ Corporate Management
- ☐ Communications with Staff

- ☐ Phone Logs
- ☐ Calendar
- ☐ Press Clippings/Photos

- ☐ JDW Transcripts
- ☐ Social Events
- ☐ Other

B. SUBJECT: Wall Street Journal Conference - Information Technology
VENUE: The Willard Inter-Continental Hotel
--JDW to give Keynote Luncheon Address (1:00 pm)

DATE: 09/18/96

C. VPU

Corporate

- ☐ CTR
- ☐ EXT
- ☐ LEG
- ☐ MPS
- ☐ OED
- ☐ SEC/Board
- ☐ TRE

Regional

- ☐ AFR
- ☐ EAP
- ☐ ECA
- ☐ LAC
- ☐ MNA
- ☐ SAS

Central

- ☐ CFS
- ☐ DEC
- ☐ ESD
- ☐ FPD
- ☐ FPR
- ☐ HRO

Affiliates

- ☐ GEF
- ☐ ICSID
- ☐ IFC
- ☐ Inspection Panel
- ☐ Kennedy Center
- ☐ MIGA

D. EXTERNAL PARTNER

- ☐ IMF
- ☐ UN
- ☐ MDB/Other IO
- ☐ NGO
- ☐ Private Sector

- ☐ Part I
- ☐ Part II
- ☒ Other

E. COMMENTS:

File Location

- ☒ EXC
- ☐ IISC
- ☒ Archives

Cleared By

Josie Bassinette

Date:

09/29/96

JDW
I asked Mairs if she
could provide the latest
on education and
technology. ~~Alta~~
Josie

A L L - I N - 1 N O T E

DATE: 17-Sep-1996 01:45pm

TO: JOSIE BASSINETTE

(JOSIE BASSINETTE@A1@WBWASH)

FROM: Maris O'Rourke, HDD

(MARIS OROURKE@A1@WBHQB)

EXT.: 37096

SUBJECT: Final: Education and Technology Update

Dear Josie

A lot has been happening since we last all met!

We have:

- ~ set up an EdTech team in HDD;
- ~ launched the Learning Network initiative with LLC funding;
- ~ commissioned a search on School-to-School initiatives around the world (this will be available shortly);
- ~ set up a workshop with Galaxy in Mexico City in October on the use of satellite TV in Distance Education;
- ~ with FPD set up a TechNet conference for October with 45 participants from around the world;
- ~ with Penn State organised to have a World Bank pre conference symposium before the prestigious International Conference on Distance Education in May 1997;
- ~ begun to explore with EDI having something similar attached to the June conference in Canada;
- ~ begun to explore collaboration with the Middle East and Israel;
- ~ produced two publications; and
- ~ employed Professor Mike Moore to produce future directions, and a vision and strategy for the Bank's role in Distance Education.

I have expanded on these below:

EdTech Team Established. HDD recently established a new Education and Technology Team (EdTech) to provide leadership within and outside the World Bank in the use of informatics and telecommunications technology in education. The team is headed by Michael Potashnik, one of the Bank's principal education specialists, on loan from LASHC and includes other educators, economists and technology specialists. The EdTech team is working in close collaboration with EDI, FPD, LLC and regional sector specialists. They have prepared an FY97 work program which will consist of staff development, research and dissemination activities and cross support for innovative projects in client countries. An update on the work programs main activities is provided below:

Learning Network. The EdTech Team, with LLC funding, recently launched a Learning Network for Education and Technology. The Network will support self-directed learning by education sector managers and staff to enhance the Bank's knowledge base and ability to provide sound and up-to-date

solutions to client countries on the use of technology in education. The Network has defined a large knowledge agenda for the staff, and is developing contacts with the world's leading specialists and institutions. We have had excellent cooperation and support from Vikas Sahasrabudhe in LLC. The Learning Network will be publicized throughout the Bank over the next few weeks in the hope of attracting 20 to 30 staff interested in undertaking learning projects during FY97

School to School Research. Consultant, Katherine Taylor, just completed a one month reserach project on school-to-school programs. Using the WWW and other information sources, she has collected a great deal of useful information on school to school communication via the Internt and the use of the Internet for instruction. Ms Taylor has given us a good data base upon which to build our knowledge of the se programs. Her report is being reviewed.

Galaxy and Distance Learning. Further to JDW's discussions with the Cisneros Group last year, the Bank and Galaxy Ltd. will convene a workshop in Mexico City on October 15-17 on the use of satellite TV in distance education in Latin America. The aim of the workshop is to explore the interest of several Latin American countries and the University of the West Indies in undertaking distance education pilot projects for in-service teacher education and classroom instruction using ITV. The pilots would be supported by Galaxy which is offering the countries free use of two satellite channels for educational purposes and by on-going or future World Bank and IDB-funded projects. HDD's EdTech Team and EDI have jointly planned the workshop with the Cisneros Group. John Middleton and Tony Bloome have taken the lead in EDI. We have a great partnership with them.

TechNet Conference. "As we look to the 21st Century, what are the major issues facing education and what role do you see for technology?" This is the question we are putting to the participants in the next TechNet Conference being organized with FPD. Carlos Braga and Roberto Direnzo are our partners in IENTI. Catherine Kleynhoff, Assistant to Jean Francoise is providing excellnt support for our joint efforts. The conference will be inaugurated on October 1 with some 45 participants from around the world .

Distance Education Symposium. Planning is now underway for a World Bank-sponsored pre conference symposium on distance education in developing countries which will be held on May 25-27, immediately prior to the International Conference on Distance Education (ICDE). The ICDE conference, which will be attended by some 1,500 or more participants, will be held at Penn State University. The symposium will be sponsored jointly with the ICDE and the American Conference on Distance Education (ACDE). Participants for the symposium will be recruited from many of the Bank's client countries.

Future Directions in Distance Education. The EdTech team has begun the preparation of a Bank report on future directions in distance education. The report is being drafted by Professor Michael Moore, a world-renowed expert in the field; Professor Moore is spending his sabbatical leave from Penn State University in HDD. The report will present case studies on the role of distance education from South Africa, Brazil, Egypt, Russian and China or Indonesia. HDD, EDI and other Bank staff and consultants are expected to provide inputs to the preparation of the report. Peter Knight Chief of the EMC has provided outstanding support to this initiative which is funded in part from the Bank's

research grant program.

Global Learning Conference. We are gearing up to help EDI plan and implement the Global Learning Conference in Toronto next June. We are in touch with John Middleton in the planning of the conference and await word from EDI as to how they would like us to assist. HDD's contribution to this conference will be in the area of education and technology.

Middle East and Israel. We have begun to explore areas of cooperation in education and technology with client countries in the Middle East and with Israel. At JDWs request, Mr. Potashnik has had two discussions with Arthur Fried, Head of the Executive Committee of the Israel Open University and these discussions will continue during the visit of Dr. Ehud Or, Director General of IOU, who is speaking to the Banks senior management this week at JF Rischards invitation. The EdTech team, with support from MNHR2, is also exploring a possible School To School initiative among secondary schools in Israel, Jordan and the West Bank. The initiative is being undertaken with Project Dialogue, which is directed by a team at Stanford Research International and has been funded by the McArthur Foundation.

Publications. Our EdTech team has completed two reports for publication. 'Research on Education and Technology, 1980-1996, Abstracts of Publications by the World Bank' and 'Cost analysis of Information Technology Projects in Education: Experiences from Developing Countries'. These are significant contributions to our knowledge development in the field.

The 'team without walls' across the Bank is working!

Should you need any further information, dont hesitate to call me or Mike Potashnik.

Kind regards

Maris

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THE WALL STREET JOURNAL Executive Conference

Business & Technology in the Next Millennium

September 18-19, 1996

The Willard Inter-Continental Hotel, Washington DC

Day 1 - 18 September 1996

Session 1 - Internet Imperatives

8.15 - Welcome and Introduction - Kenneth Burenga, President, The Wall Street Journal

8.30 - Keynote Address - Jim Barksdale, CEO, Netscape Communications

9.00 - CEO Roundtable Debate

Speakers

Jim Barksdale, CEO, Netscape Communications

Herbie Hancock, Artist & Musician

Steve Case, President & CEO, America Online

Hubert Burda, Chairman, Burda Kommunikation

Danny Hillis, Vice President, R&D, The Walt Disney Company

Moderators

Dennis Kneale, News Editor Technology, The Wall Street Journal

Denis Gilhooly, Media & Technology Director, The Wall Street Journal Europe

10.05 - Keynote Address - Reed Hundt, Chairman, Federal Communications Commission

Session 2 - Free Market Telecommunications

10.45 - Keynote Address - Ray Smith, Chairman & CEO, Bell Atlantic

11.05 - Keynote Address - Bert Roberts, Chairman & CEO, MCI

11.25 - CEO Roundtable Debate

Speakers

Ray Smith, Chairman & CEO, Bell Atlantic

Alex Mandl, President & CEO, Associated Communications

Charles Sirois, Chairman & CEO, Teleglobe

Bert Roberts, Chairman & CEO, MCI

Brian Thompson, Chairman & CEO, LCI International

Moderators

John Keller, Deputy News Editor Technology, The Wall Street Journal

Denis Gilhooly, Media & Technology Director, The Wall Street Journal Europe



1.00 - Keynote Luncheon Address - James Wolfensohn, President, The World Bank

Session 3 - Ubiquitous Internet Computing

2.30 - Keynote Address - Larry Ellison, Chairman & CEO, Oracle

2.50 - CEO Roundtable Debate

Speakers

Larry Ellison, Chairman & CEO, Oracle

Jerry Yang, Chief Yahoo!, Yahoo!

Shikar Ghosh, Chairman, Open Market

Gary Fernandes, Vice Chairman, EDS

Olof Lundberg, Chief Executive, ICO Communications

Moderators

Greg Hill, Senior Editor Technology, The Wall Street Journal

Denis Gilhooly, Media & Technology Director, The Wall Street Journal Europe

Session 4 - Art of Content

4.05 - Keynote Address - Michael Kinsley, Editor, Slate

4.25 - CEO Roundtable Debate

Speakers

Michael Kinsley, Editor, Slate

Ed Horowitz, Chairman & CEO, Viacom New Media

Mary Frost, Managing Director, EMC Group, Price Waterhouse

Lynn Forester, President, FirstMark Holdings

Thomas Dolby, President, Headspace

Moderators

Dennis Kneale, News Editor Technology, The Wall Street Journal

Denis Gilhooly, Media & Technology Director, The Wall Street Journal Europe

THE WALL STREET JOURNAL Executive Conference Business & Technology in the Next Millennium

September 18-19, 1996

The Willard Inter-Continental Hotel, Washington DC

Day 2 - 19 September 1996

Session 5 - Digital Money

9.00 - Keynote Address - Jim Manzi, CEO, Nets Inc.

9.20 - CEO Roundtable Debate

Speakers

Jim Manzi, CEO, Nets Inc.

Lee Stein, CEO, First Virtual

David Shpilberg, Director IT Practice, Ernst & Young

Eric Roach, CEO, Lombard

Howard Lutnick, President & CEO, Cantor Fitzgerald

Moderators

Dennis Kneale, News Editor Technology, The Wall Street Journal

Denis Gilhooly, Media & Technology Director, The Wall Street Journal Europe

Session 6 - Price & Performance

10.30 - Keynote Address/Q&A - Andy Grove, President & CEO, Intel (via videoconference)

11.10 - CEO Roundtable Debate

Speakers

Marie Monique Steckel, President, France Telecom USA

Johan Kooij, Executive Vice President, PTT Telecom

Mike Pascoe, President, Newbridge Networks

John Whiteside, General Manager, IBM Global Network

Russ Daggatt, President, Teledesic

Moderators

Greg Hill, Senior Editor Technology, The Wall Street Journal

Denis Gilhooly, Media & Technology Director, The Wall Street Journal Europe

12.00 - Keynote Luncheon Address - Jack Kemp, Republican Vice Presidential Candidate (invited)

Session 7 - Business & Technology in the Next Millennium

2.00 - Keynote Address - Steve Jobs, Chairman, NeXT Computer (via videoconference)

2.20 - Closing Roundtable Debate - Part I

Speakers

Eric Schmidt, Chief Technology Officer, Sun Microsystems

David Nagel, President, AT&T Bell Labs

Tony Rutkowski, Vice President Internet, General Magic

Maurizio Decina, President, IEEE Communications Society

Greg Simon, Chief Domestic Policy Advisor, Office of the Vice President

Moderator

Greg Hill, Senior Editor Technology, The Wall Street Journal

Denis Gilhooly, Media & Technology Director, The Wall Street Journal Europe

3.40 - Closing Roundtable Debate - Part II

Speakers

Mike Nelson, Special Assistant, Information Technology, The White House

John Kryzwicki, President, Cambridge Strategic Management Group

Lawrence Wilkinson, Managing Director, Global Business Network

Eli Noam, Professor and Director, Columbia Institute for Tele-Information

Thomas J. Ramsey, Partner, Squire, Sanders & Dempsey

Jonathan Solomon, Executive Director, Cable & Wireless

Moderator

James Bond, Chief, Telecommunications and Information Infrastructure Division, The World Bank

4.30 - Conference ends

OLD
~~Have~~ been
revised

WALL STREET JOURNAL CONFERENCE
BUSINESS AND TECHNOLOGY IN THE NEXT MILLENNIUM

September 18, 1996

Mr. James D. Wolfensohn — Talking Points

Thanks to the Wall Street Journal Europe for organizing this important event, and for bringing together the world's leading figures in information technology and telecommunications.

The people present today are on the barricades of the information revolution. They are the ones who will determine how the information technology and telecommunications sectors develop in the next century.

[Note: acknowledge Rupert Murdoch, who will speak immediately before you; also note attached participants list, including Ray Smith, Frank Biondi, and others.]

I. INTRODUCTION

As President of the World Bank I have a special take on the uses of information technology for world development.

My top concern is not about information technology. It is world poverty. It is the living conditions of the 4.5 billion people who live in the countries we serve — the clients of the World Bank.

- My priority is the 1.3 billion of them who live on less than a dollar a day.
- It is the 600,000 women who die in childbirth every year, and the nearly 16 million people around the world who are believed to be infected with the HIV virus.
- It is the 25 million children, most of them girls, who cannot go to primary school, and the 1.3 billion people without access to safe water.
- And it is the nearly 30 million people who are currently refugees from the 33 conflicts that ranged around the world last year.

Yet information technology and telecommunications — *information infrastructure*, if you will — is of the utmost importance to me and to the World Bank. **It is one of the most powerful weapons we have to fight poverty, disease, ignorance and violence — the multiple plagues that combine to make life hellish for billions of people.**

Communications technology is now affordable for developing nations. Costs have plummeted, and the technology has improved so dramatically that people in even the most remote areas of the world can now have access.

The World Bank is doing quite a bit to expand information infrastructure into the developing countries. But we cannot do it alone, and we certainly have no intention to try. Many of you here today are actively involved in projects in the developing world; in fact, some of you are partners with us.

My message today is that by acting in partnership — with the World Bank, with local governments, and with the people in developing countries — everybody wins. You will see the benefits in your own bottom line. And at the same time, you will be making an indispensable contribution to improving the quality of life for the world's poor.

II. THE INFORMATION REVOLUTION HOLDS REAL OPPORTUNITIES FOR DEVELOPMENT

As President of the World Bank, my business is the development business. As you all know, **economic development is about improving the quality of life of people**, which takes money — and that is why the World Bank is a bank. But development is more than just money.

Above all, **development takes information and learning:** information about what works and what doesn't; skills and training to make people productive; and learning, which builds up the stock of human intellectual assets that defines a nation and makes it create wealth. Investment in learning is why some resource-poor countries like Korea, Israel and Singapore have done so much better than other countries with significant natural resources like oil or minerals.

Now, your business, *information infrastructure*, is all about handling and transmitting information. Because the costs of computing and communicating are coming down so fast, the information revolution is having a major impact on economic development.

I'd like to give you some examples of what information infrastructure can do:

First, information infrastructure can help businesses connect and become *globally competitive*. In today's global marketplace, being competitive means a country or a firm has to be agile and connected. The new information infrastructure eliminates the obstacles of distance and

location; and it allows businesses to respond quickly to changing circumstances of the marketplace.

- With help from the World Bank, the countries of the Eastern Caribbean are becoming providers of services for the US market like 1-800 numbers, airline ticketing, financial services and computer-assisted design. In this way American businesses reduce their administrative costs and become more competitive in the world market, while jobs are created in the Caribbean.
- In Morocco, a Casablanca-based company provides page-setting services for French publishing companies using a dedicated data-line. This enables the publishers in France to control costs, and Morocco to diversify its exports to the European Union. The World Bank is assisting Morocco with the reform of its telecommunications sector, so that telecommunications services of this kind are cost-effective and widely available.

Second, information infrastructure can be a powerful tool to *reduce isolation*. A key outcome of the information revolution is the *end of geography*. Information technology holds enormous potential to end exclusion and connect people and firms. Connectivity through cheap electronic networks is a boon for isolated people everywhere; in rural areas, in poor developing countries, even people isolated because of physical disability.

- In Ghana, with the help of an international technology company [*Motorola*], and as part of a World Bank-financed telecommunications project currently under preparation, the Government is experimenting with a low cost fixed-wireless scheme which will provide cheap telecommunications services to rural areas. If the scheme works — and we are very optimistic — this could dramatically improve access for rural communities who will now be able to be connected at low cost to the rest of the country and to the world.
- Cocoa farmers in rural Côte d'Ivoire now use cellular phones to obtain direct price quotes from the London commodities market, to bargain better with the middlemen who buy their produce. They connect directly to the international market which governs their livelihood, and are thus able to respond in real time to market fluctuations.

Third, information infrastructure can *develop human potential*.

Information technology is about empowerment. Developing the potential of

a country's citizens takes education and preventive health services. Information technology and telecommunications promise enormous improvements in the delivery of these services

- The Bank is supporting the *African Virtual University* (AVU), a pilot program that will deliver world-class higher education to university students in Sub-Saharan Africa by utilizing distance-education technology at far lower cost than conventional education techniques.
- A consortium headed by the World Health Organization has created the *South East Asia Aids Network*, using the Internet to monitor the spread of this plague in the region, and thereby enable a quicker response to emerging trends.
- In Jamaica – with support from us, the Inter-American Development Bank and other donors -- a group of private firms and the government is improving the computer literacy of Jamaican schoolchildren.

Fourth, information infrastructure can be harnessed to *reduce poverty*.

Information technology is a great equalizer. It can provide opportunities to anyone with the skills to use it. It provides the poor with access to information, with the capacity to learn, and with the links to the markets they need to participate in economic growth.

- In the township of Mamelodi, near Pretoria in South Africa, a consortium of IBM, government institutions, local schools and the World Bank, is financing the use of the Internet to reduce the exclusion of the poor. The scheme answers local people's questions concerning employment, lodging, health and basic human rights. For the first time in their lives, people in this township have access to the basic information they can use to improve their conditions.

Fifth, information infrastructure can provide *environmental monitoring and management*. Good environmental management means being able to gather information, analyze it and take informed decisions. Information infrastructure presents enormous potential for these activities, and has become an essential component of any environmental management system.

- In Mexico, a consortium of environmental institutes is training people to place and maintain environmental information concerning Mexico on the Internet. Real-time on-line data of this kind will provide individuals with information they need to make informed decisions. Also, it will

create a degree of transparency about environmental problems which will enable stakeholders to protect their rights.

- In Eastern Nepal, a land-resource database of the Arun River Basin, obtained by satellite imaging, produced the first basin-wide mosaic of land use and capability, with detailed maps of deforestation hotspots. This enabled the authorities to take action to halt or decelerate environmental degradation at a point far earlier than they would have been able merely relying on site visits.

Sixth, information infrastructure can be a powerful force for *better government*. Poor governance has been the scourge of the developing world. Part of the problem has been lack of government capacity to perform the most basic of its tasks. Information technology can go far towards filling this gap.

- In Mauritania, a \$1 million investment in automated customs processing not only reduced the time for customs clearance from weeks to minutes but significantly reduced fraud and corruption, which by itself paid for the investment.
- In Morocco, the Ministries of Finance and of Planning have computerized the country's tax administration, auditing and control. The time taken to prepare the national budget was thus cut in half. Finally, better controls reduced tax evasion and the government saw an increase in tax revenue yield of 20%, without needing to raise taxes.
- In the new democracies of Eastern Europe and the former Soviet Union, the availability, timeliness, and — above all — *ubiquitousness* of information, often available over the Internet or from satellite TV, have made governments much more accountable than they were. Transparency and newly aware public opinion have influenced government actions and policy in areas ranging from environmental pollution (oil spills in Russia) to elections (Poland) and fiscal management.

III. BRINGING INFORMATION INFRASTRUCTURE TO DEVELOPING COUNTRIES IS A CHALLENGE

If information infrastructure holds such opportunities for development, how are the developing countries doing with it? I have to report that they are not doing very well.

- **The developing world has 3.8 telephone lines per hundred people, compared to over 50 in developed countries.** In Sub-Saharan Africa excluding South Africa there are fewer than 5 lines for 1000 people. Half the world's population has never made a phone call.
- **Waiting times for telephones in developing countries often stretch into years.** The surge of cellular telephones in emerging economies is really a sign of the inability to get a regular phone.
- **Companies and users have difficulty obtaining the services they need,** including data lines, Internet access, and electronic mail. It is difficult to be globally plugged in and competitive if you cannot send or receive faxes and email.
- **Tariffs are high, service quality is poor, and investment is insufficient.** Too many telecommunications companies are run like a state-owned public utilities -- hardly a good model for an efficient and cost-effective telecommunications sector.
- **Computers are rare in the developing world,** where there is only one Personal Computer per 100 people, compared to over 18 machines per 100 in developed economies. Among low-income countries the ratio is even more dramatic, with less than one machine per 1000 inhabitants.
- **Finally, there is a shortage of people who are computer-literate and technology-aware.** Schooling and vocational training in the developing world is even less advanced than in the developed countries, and school-leavers generally don't have the skills they need for the new economy.

What will it take to bring the emerging economies up to par? We estimate that for the developing world and the transition economies, it will take investments in telecommunications of about \$55 billion to \$60 billion per year over the next five years. If we include information technology, developing countries will need a total of \$100 billion to \$120 billion in investments per year. This is twice what was invested per year in the first half of this decade.

Such sums are clearly beyond what governments can finance from tax dollars, and beyond the means of public institutions like the World Bank. These investments must be made by the private sector, both local investors and international companies. We estimate that between half and two-thirds of the investment must come from the private sector. Governments will have to entice investors into their information infrastructure sectors.

To attract investors, governments must create:

- an ***information-friendly telecoms sector***, with laws and regulations that ensure a level playing-field in areas like intellectual property rights, use of electromagnetic spectrum, interconnection between service providers, revenue-sharing and tariffs;
- an ***investor-friendly business environment*** where investments are protected, contracts are enforceable, and dividends can be repatriated if wished. Where the risk of doing business is at a manageable level for investors; and
- a ***computer-literate and technology-aware workforce***, with the skills that are needed in the new economy.

This is the challenge for governments of emerging economies: to create a climate attractive to private sector investment in information infrastructure. This is where the World Bank Group comes in.

IV. WHAT THE WORLD BANK GROUP CAN BRING TO THE TABLE

Our first telecommunications loan dates to 1951, and we have been in the information infrastructure business in a regular way since 1961. Today the World Bank Group, through the World Bank, the IFC, and MIGA finances about \$0.5 billion per year in expansion and modernization of telecommunications facilities, and more than twice that in information technology. Because we leverage our money with other sources of financing, the World Bank Group enables more than one project in 10 to get off the ground in emerging economies.

But the World Bank's role goes way beyond financing hardware:

- **We help create the information- and investment-friendly environment I just talked about**, mostly by assisting governments reform the business environment; assisting with privatizing telecommunications; and providing "deal-clinching" financial support in the form of guarantees or partial financing. In particular, our International Finance Corporation (IFC) is an important source of both finance and advice in these tricky investment environments. Through our Multilateral Investment Guarantee Agency (MIGA), we also make available guarantees against non-commercial risk.
- **We help ensure the emerging information infrastructure is used for applications that encourage broader economic development.**

Increasingly the development community has realized what extraordinary potential lies at the heart of the information revolution. We in the World Bank are now moving quite radically to redefine our business, in order to take maximum advantage of this potential. This means doing the projects we are involved in differently, in areas as diverse as education, agricultural extension, public sector management, banking, and energy.

The projects we finance in these sectors now include important information technology components to harness the potential offered by technology; but also, they are increasingly designed to permeate the technology down to the common person, so that he or she can acquire the skills needed for the new economy and benefit from the empowerment that technology offers.

Both of these lines of business are radically different from what we started out with at our creation at the Conference of Bretton Woods in 1944. The area in which they differ most radically is the extent to which **we need to work in partnership with the private sector**. As an example of how far we have moved from our erstwhile public sector roots, I would like to take a minute and talk to you about our **Information for Development Program — infoDev**.

The **infoDev** program is a consortium of governments both from the developed world and emerging economies, private companies [eg. IBM], the World Bank and other multilateral institutions such as the European Union. We have come together to create this initiative, which provides expertise and grant financing to people in emerging economies who are doing truly innovative things to bring the information economy to the developing world. It was created at the end of last year, and already it has provided grants for a number of exciting projects, some of which I mentioned earlier. Essentially it is a catalytic tool – it brings together partners and leverages financing for several basic purposes:

- It will help create a market-friendly environment to accelerate access to information technologies and telecommunications;
- It will help reduce poverty by ending exclusion of people from information;
- It will promote education, health and the environment; and
- It will improve the efficiency and transparency of governments.

The reason why *infoDev* is such an interesting initiative is that it is a true partnership. The private sector is in alliance with governments and with ourselves, to further a common goal — economic development in the emerging economies. For the private sector, the developing world will be where the technology growth markets and the source of future income will be located. For decision-makers in emerging economies, the private sector can be a motor for growth to help them raise the standard of living of their people.

CONCLUSION

In conclusion, I would like to do three things. The first is again to thank Wall Street Journal for the opportunity to speak to you today. The second is to wish all of you in the information technology and telecommunications sectors well, as we move down the technology rollercoaster that is taking us into the twenty-first century.

The third is to put in a plea to you, as key private sector players in the world economy, to partner with us in the development field, so that the extraordinary benefits that the information revolution promises are indeed shared by all on the planet.

Thank you.

THE WALL STREET JOURNAL. PRESENTS

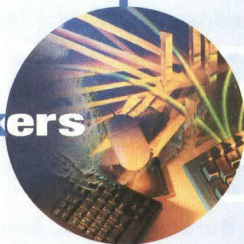
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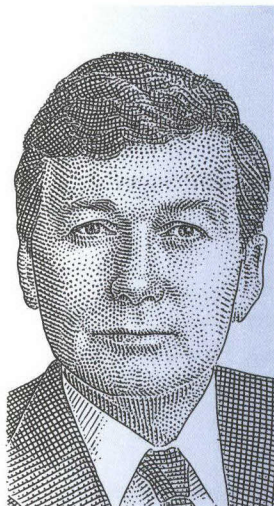


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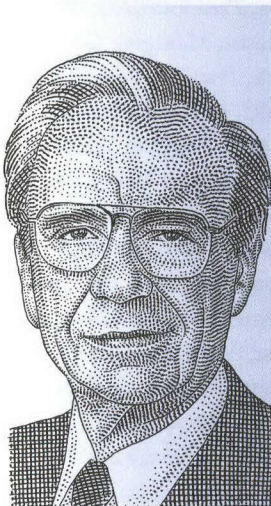
● **Keynote Speakers**



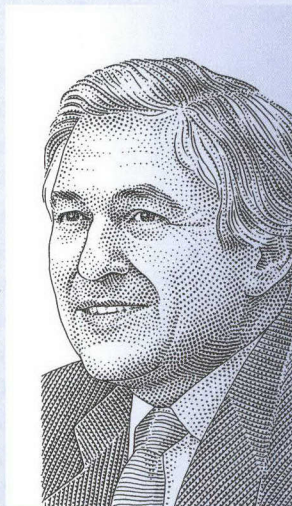
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Reed Hundt
*Chairman
Federal Communications
Commission*



Rupert Murdoch*
*Chairman
News Corporation*



James Wolfensohn
*President
The World Bank*



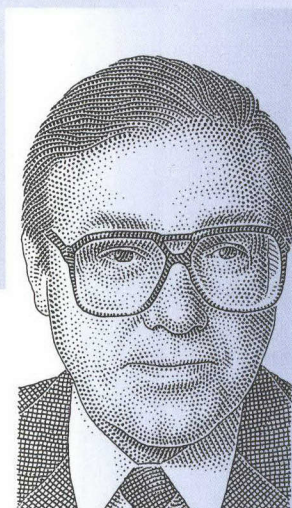
Frank Biondi
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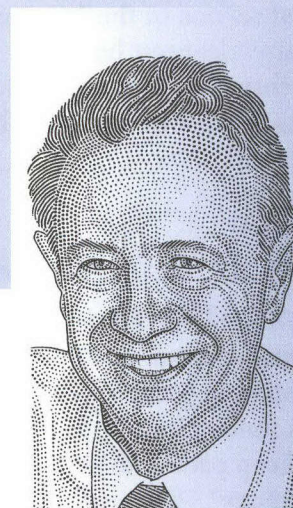
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Intuit*



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*Chairman & CEO
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Andy Grove
*Chairman & CEO
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BUSINESS & TECHNOLOGY IN THE NEXT MILLENNIUM

*THE WALL STREET JOURNAL is pleased to present **BUSINESS & TECHNOLOGY IN THE NEXT MILLENNIUM**, an executive conference examining those technological business trends that are shaping markets and economies throughout the world. Led by experts in the fields of computers, telecommunications, media, entertainment and government, the conference features lively debates and provocative discussions on issues ranging from regulation of new media to the value of content in the age of information overload.*

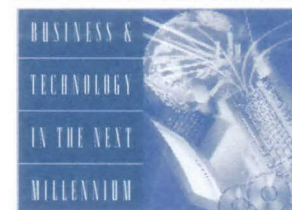
INFORMATION AND COMMUNICATIONS TECHNOLOGIES PROMISE NEW PRODUCTS AND SERVICES IN ALMOST EVERY REALM OF ECONOMIC ACTIVITY. Yet when business and technology converge, the process often isn't a smooth one. The term "creative destruction" probably best describes what happens when technological change, accompanied by new trading patterns and deregulation, forces companies and their workers to adapt to a suddenly different marketplace and new rules of economic behavior.

The pressure to adjust in these circumstances has been immense, and the process has only begun. To take advantage of new technologies and remain competitive, business executives are turning to new strategies and more flexible organizational structures.

Focus on core activities, decentralized management, and a more mobile and skilled workforce become watchwords in this new economy. At the same time, regulators everywhere are under pressure to foster more competition and ease entry barriers within the markets created by the new technologies.

For all the media hype and industry frenzy that accompanies new information and communication's technology, there's precious little clarity on what steps to take next. In this climate of "creative destruction," where all of yesterday's forecasts are dubious, all scenarios doubtful, **BUSINESS & TECHNOLOGY IN THE NEXT MILLENNIUM** provides valuable insight into what technology's future holds and how to plan for it.

THE WALL STREET JOURNAL.



BRINGING TOGETHER TODAY'S LEADERS WITH THE POWER TO SHAPE TOMORROW.

Session 1 *Internet Imperatives*

The global reach of the Internet will make it easier to find new markets for products and to develop products for new markets, particularly if companies can move quickly and inexpensively to adapt their products to local or national preferences. That is the theory. But what precisely will be the impact of the Internet on markets, capital, and traditional intermediaries? And what will be the value of Intranets for businesses?

Session 2 *Free Market Telecommunications*

By 1998, deregulation promises to deliver a free market in telecommunications in the United States, Europe, and Asia. What opportunities will this provide for American business overseas? At home, the passage of this year's omnibus telecommunications act should deliver considerable benefits to the consumer. But how will the Federal Communications Commission manage the complex

task of reform, and what is the danger that power will revert to an oligopoly of telecommunications behemoths intent on controlling the market?

Session 3 *Ubiquitous Computing*

The dominance of a few players in the global personal computer market is currently being challenged by the high profile launch by potential competitors of the network PC. Or is it? How quickly can such devices with sufficient functionality be brought to market, priced as consumer electronic products?

What is clear is that the doubling of computer processing power every 18 months is leading to a new age of ubiquitous computing where distributed intelligence will reside in everything from the washing machine to the toaster, and there will be an Internet connection in every light bulb.

Session 4 *The Art of Content*

The promise of infinite bandwidth via fiber optic communica-

tions and the spectacular growth of the Internet has opened up limitless opportunities for content providers. But what will the pipes carry? Will the democratic nature of the Internet, with everyone a publisher or producer, reduce the hegemony of the media conglomerates and empower the individual? Or will the information revolution simply expose a dearth of creative talent? What will be the ultimate impact of interactive multimedia communications on traditional media and entertainment interests?

Session 5 *Digital Money*

The advent of digital cash promises to transform the world of retailing and finance through electronic commerce. The question is how? Will the Internet be just another marketing channel like direct mail or home shopping, or will it revolutionize global commerce? And will large multinationals lose the advantage of size, while small start-ups leverage the technology and become big players internationally?

Session 6 *Pricing and Performance*

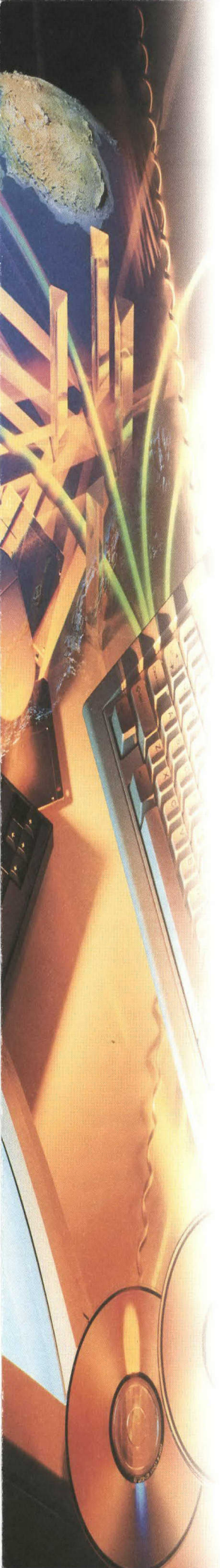
Two factors threaten to stall the development of interactive multimedia communications in its tracks: the lack of a realistic pricing structure and the absence of available bandwidth. Without the transition to flat-rate pricing structures by the world's phone companies where customers pay an inexpensive monthly fee, the Internet and other communications networks will fail to reach their potential. Similarly, the quality of service of the Internet and other networks must be raised beyond that of today's telephone networks. Who will pay and who will deliver?

Session 7 *Business & Technology in the Next Millennium*

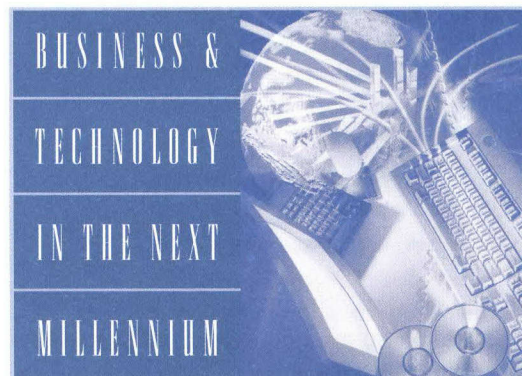
The digital economy will transform global business practice. But just how can innovations in business models keep pace with innovations in technology? What is the electronic market capable of delivering, and what, if any, will be the future role of governments and international organizations?

Session Speakers

Marc Andreessen, *Founder, Netscape Communications*
Duane Ackerman, *Chief Executive Officer Elect, BellSouth*
Morton Bahr, *President, Communications Workers of America*
Jeff Berg, *Chairman, ICM*
Frank Biondi, *Chairman/CEO, MCA*
Michel Bon, *Chairman, France Telecom*
Hubert Burda, *Chairman, Burda*
Steve Case, *President/CEO, America Online*
David Chaum, *Managing Director, DigiCash*
Greg Clark, *President, News Technology*
Scott Cook*, *Chairman, Intuit*
Russ Daggatt, *President, Teledesic*
Maurizio Décina, *President, IEEE Communications Society*
Thomas Dolby, *President, Headspace*
Larry Ellison, *Chairman/CEO, Oracle*
Gary Fernandes, *Senior Vice President, EDS*
Lynn Forester, *President, Firstmark Holdings*
Mary Frost, *Managing Director, EMC Group, Price Waterhouse*
Shikar Ghosh, *Chairman, Open Market*
Andy Grove, *President/CEO, Intel*
Herbie Hancock, *Artist and Musician*
Reed Hundt, *Chairman, Federal Communications Commission*
Danny Hillis, *Vice President, Imagineering, Disney*
Ed Horowitz, *President, Viacom New Media*
Steve Jobs, *Chairman, Next Computer*
Olof Lundberg, *Chief Executive, ICO*
Alex Mandl, *President/COO, AT&T*
Jim Manzi, *CEO, Nets Inc.*
Craig McCaw, *Chairman, McCaw Communications*
Neil McMillan, *Chairman, NGBT, World Trade Organisation*
Rupert Murdoch*, *Chairman, News Corporation*
David Nagel, *President, AT&T Bell Labs*
Mike Nelson, *Special Assistant/Information Technology, The White House*
Ernesto Pascale, *Chairman, STET*
Bert Roberts, *Chairman/CEO, MCI*
Eric Schmidt, *Chief Technology Officer, Sun Microsystems*
Charles Sirois, *Chairman/CEO, Teleglobe*
Ray Smith, *Chairman/CEO, Bell Atlantic*
Jonathan Solomon, *Executive Director, Cable & Wireless*
Lee Stein, *CEO, First Virtual*
Ben Verwaayen, *President, PTT Telecom*
John Whiteside, *General Manager, IBM Global Network*
Lawrence Wilkinson, *Managing Director, Global Business Network*
James Wolfensohn, *President, World Bank*
Jerry Yang, *Chief Yahoo, Yahoo! Corp.*
and many more



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An Executive Conference

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September 18-19, 1996

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Wall Street Journal Conference

Business and Technology in the next Millennium

September 18, 1996

Mr. J.D. Wolfensohn

The Conference

- Includes key players in the information revolution
- About how the information revolution will change business in the next millenium
- You will make the keynote luncheon address
- Your speech:
 - ✓ You get 15 minutes
 - ✓ The audience knows a lot about information technology, practically nothing about development
 - ✓ Great opportunity to create a partnership with key technology companies

Who will attend

- | | |
|-----------------|-------------------------------|
| ■ Andy Grove | CEO Intel |
| ■ Reed Hundt | Chairman FCC |
| ■ Jim Barksdale | President & CEO Netscape |
| ■ Steve Case | Chairman & CEO America Online |
| ■ Ray Smith | Chairman & CEO Bell Atlantic |
| ■ Bert Roberts | Chairman & CEO MCI |
| ■ Larry Ellison | Chairman & CEO Oracle |
| ■ Steve Jobs | Chairman NeXT Computer |
| ■ etc... | |

Speech outline

- I. Introduction**
- II. The information revolution holds real opportunities for development**
- III. Bringing information infrastructure to developing countries is a challenge**
- IV. What the World Bank Group can bring to the table**

I. Introduction

Our concern is world poverty

- **Living conditions of the 4.5 billion in developing countries**
 - ~ 1.5 billion on less than a dollar a day
 - ~ 600,000 women die in childbirth
 - ~ 16 million people infected with HIV
 - ~ 25 million children (mostly girls), who cannot go to primary school
 - ~ 1.3 billion people without safe water
 - ~ 30 million refugees from 33 conflicts

I. Introduction

Information Infrastructure

- **Information infrastructure is a powerful weapon in the fight against poverty, disease, ignorance and violence**
- **Communications technology is now affordable for developing nations**
- **We want to partner with the private sector to bring the information revolution to the developing countries**

II. Opportunities for development

Information Infrastructure contributes to development

- 1. Connecting businesses for global competitiveness**
- 2. Reducing isolation**
- 3. Developing human potential (education, health)**
- 4. Reducing poverty**
- 5. Environmental monitoring and management**
- 6. Better government**

II. Opportunities for development

1. Connecting businesses for global competitiveness

- **Eastern Caribbean countries export services to the US: 1-800 numbers, ticketing, computer-assisted design**
 - ~ Improves competitiveness of US companies
 - ~ Provides jobs in service sector
 - ~ Supported by Bank technical assistance

- **Morocco company carries out editing and page-setting for French publishers using dedicated data line**
 - ~ Reduces costs for French firms
 - ~ Exports services, rather than workers
 - ~ Bank is helping with telecoms reform to make these services available

II. Opportunities for development

2. Reducing isolation

- **Ghana: fixed wireless will provide rural telecoms more cheaply**
 - ~ New wireless technology holds promise for cheap rural connectivity
 - ~ supported by Bank Credit; with Motorola

- **Cote d'Ivoire: cocoa farmers use cellular phones for prices from London**
 - ~ Bank is helping privatize telecoms company and open market

II. Opportunities for development

3. Developing human potential (education and health)

- ***African Virtual University***: providing world-class higher education via satellite and information technology
 - ~ supported by the Bank and *infoDev*
- ***SE Asia Aids Network***: monitoring aids to provide a quick response to regional trends in infection
 - ~ Supported by World Health Organization, *infoDev*
- **Jamaica**: computers in classrooms, to improve computer literacy of schoolchildren
 - ~ Financed by InterAmerican Bank, private sector, *infoDev*

II. Opportunities for development

4. Reducing poverty

- **Mamelodi (South Africa): Internet used to reduce exclusion of poor**
 - ~ Providing answers to people's questions -- employment, lodging, health, human rights
 - ~ Supported by IBM, local schools, Govt., and the Bank through *infoDev*

II. Opportunities for development

5. Environmental monitoring and management

- **Mexico: management of environmental information on the Internet, transparency about environmental problems**
 - ~ Supported by the Bank through *infoDev*
- **Nepal: satellite imaging provided the first basin-wide mosaic of land use and deforestation hotspots of the Arun river basin**

II. Opportunities for development

6. Better government

- **Mauritania: automating customs procession reduced customs clearance time from weeks to minutes, substantially reduced fraud**
 - ~ **Financed by the Bank (\$1 million)**
- **Morocco: Computerizing tax administration increased tax revenue yield without increasing taxes, and reduced time to prepare budget by half**
 - ~ **Financed by the Bank**
- **Eastern Europe, FSU: Access to public information (Internet, satellite TV) has increased government accountability**
 - ~ **Environment (oil spills in Russia)**
 - ~ **Elections (Poland)**
 - ~ **Fiscal management**

III. The Challenge

Information infrastructure is rare, and poorly run, in many developing countries

- **Developing world: 3.8 telephone lines/100 people, over 50 in developed countries**
- **Sub-Saharan Africa excluding South Africa: less than 5 lines for 1000 people**
- **Half the world's population has never made a phone call**
- **Waiting times for a phone stretch into years**
- **Services not available for companies (faxes, data lines, Internet, email etc.)**
- **Tariffs are high, service quality is poor**

Running telecoms companies like a state-run public utility doesn't work very well.

III. The Challenge

Using information infrastructure requires skill and computer-literacy

- **Computers are rare**
- **There is a shortage of people who are computer-literate and technology-aware**

III. The Challenge

What is needed?

- Investments of \$100 billion - \$120 billion per year
- Major private sector activity (1/2 to 2/3 of the total)
- An environment that is:
 - ~ *information-friendly* -- laws and regulations for intellectual property rights, use of electromagnetic spectrum, interconnection, tariffs
 - ~ *investor-friendly* -- where investments are protected and contracts enforced
- A computer-literate and technology-aware workforce

IV. The Role of the World Bank

What the World Bank Group is doing for information infrastructure

- **Helping create the information- and investment-friendly environment**
 - ~ Helping with reform and privatization of the telecoms and information technology sectors
 - ~ Deal-clinching financial support from IFC
 - ~ Bank guarantees for country risk, MIGA
- **Ensuring the information infrastructure is used for development**
 - ~ Information technology components in education, agriculture, public sector management, banking, energy, etc.
 - ~ Education and vocational training
 - ~ The Information for Development Program -- *infoDev*

IV. The Role of the World Bank

The Information for Development Program - *infoDev*

- A consortium of private companies, governments, EU, the Bank
- Provides expertize and catalytic grants to bring the information revolution to developing countries
- It is a true partnership
- We are seeking private sector participants

Conclusion

- Thanks to the Wall Street Journal
- Wish the participants from technology companies well
- Urge the companies to partner with the World Bank to bring the information revolution to the developing world (eg. through *infoDev*)

View Update History