SPEAKERS' BOOK

Combined Sessions

ITU TELECOM AMERICAS 2000

Rio de Janeiro

10 - 15 April

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Forum opening COM.1A

Room C

Monday, 10 April 2000	10:00 – 12:30

Chairperson:

Mr. Jean-Patrick BARÉ,
President,
ITU-TELECOM (ITU)

Forum Opening Keynote Speakers:

Mr. Yoshio UTSUMI,
Secretary-General,
International Telecommunication Union (ITU)

Mr. Renato GUERREIRO,
President,
ANATEL (Brazil)

Mr. Jean-Patrick BARÉ
President
ITU TELECOM

COM.1A

Biography

Jean-Patrick Baré has served the ITU for more than 23 years in various capacities in the human resources management field. From 1990 until 1998, Mr. Baré was the Chief of the Personnel and Social Protection Department. In March 1998, he was nominated President of ITU TELECOM and Chairman, TELECOM Board. Since his appointment**,** Mr. Baré presided over the successful Africa Telecom 98, hosted in Johannesburg. This was the ITU's 20th Telecom event and its fourth in the Africa region.

Prior to his employment with ITU, Mr. Baré was an information system specialist for a number of corporations in France. Jean-Patrick Baré was educated in Geneva and he holds a Diploma of Engineer Physicist from the University of Geneva.

Mr. Yoshio UTSUMI
Secretary-General
(International Telecommunication Union)

COM.1A

Secretary-General

Mr. Yoshio Utsumi has been in the telecoms business for over thirty years and has a proven track record of expertise at senior policy levels gained both nationally and internationally.

After earning a Bachelor degree of Law from the University of Tokyo and a Master of Arts in Political Science from the University of Chicago, Mr. Utsumi joined the Ministry of Posts and Telecommunications (MPT). In 1972, he was nominated professor of public administration at the MPT Postal College. In 1986, he led Japan's largest investment fund at the Postal Life Insurance Bureau of the MPT until 1988 when he moved to broadcasting as the Head of the General Affairs Division of MPT's Broadcasting Bureau.

For seven years, he helped shape Japan's domestic policies at the Communications Policy Bureau. His experience in international affairs includes three years in Geneva where he served as First Secretary of the Permanent Mission of Japan in charge of ITU affairs and two years as Director-General of International Affairs of the Ministry of Posts and Telecommunications. In 1994, he was elected Chairman of the ITU plenipotentiary conference. At the senior policy-making level, he served as MPT Director-General, assistant Vice-Minister and Deputy Minister until his election as Secretary-General of ITU on 20 October 1998 by the Minneapolis Plenipotentiary Conference.

Mr. Utsumi is credited with having introduced the competition and liberalization policy at a time when such ideas were not widely accepted. His initiative led to Japan's first reform of its telecommunication market. He was also a major driving force in many of Japan's most important projects to develop multimedia industries. In the postal sector, he undertook a major restructuring of Japan's postal services which he carried out successfully with the cooperation of the 200 000 staff at every level which he skillfully enlisted. On the international scene, Mr. Utsumi has played a very active role in many negotiations and, in particular, those leading to the historic WTO agreement on basic telecommunications.

Mr. Utsumi was born on 14 August 1942. He and his wife Masako, an architect, have a son and a daughter.

Mr. Renato NAVARRO GUERREIRO
President
ANATEL (Brazil)

COM.1A

Resume

Telecommunications Engineer, graduated from the Pontifical Catholic University in Rio de Janeiro, in June 1973, having published a study entitled "A Comparison Between Data Communications Systems."

Worked on a number of radio broadcast designs and in the areas of transmission engineering, network planning, investments management, operations, human resources development, and business planning and control in telecommunications companies.

Held the positions of adviser, division manager, department manager, director's assistant, technical director, operations director, and president, as well as member and chairman of the administrative and fiscal councils for TELEBRÁS operating companies.

Participated in specialized telecommunications courses, congresses, seminars, and workshops, including as instructor, keynote speaker, and debater, and also engaged in study groups on issues associated with telecommunications.

Carried out missions in conjunction with administrations, operating companies, and industries involved in the telecommunications sector in Italy, Spain, France, Australia, United States, South Korea, and Japan.

Was in charge of the coordination of TELEBRÁS exposition in Moscow, Russia.

Participated in seminars and workshops in Venezuela, Ecuador, Colombia, USA, France and Bolivia, America's Telecom 96, ITU's World Conference in Argentina, ITU's Plenipotentiary Conference in Minneapolis, UPU's Congress in South Korea, and Latin-American Telecommunications CEO's Congress in Chile.

Headed the Brazilian negotiating delegations on telecommunications at the WTO, in bilateral meetings with the United States, as well as in INTELSAT and INMARSAT meetings and assemblies.

Received the decorations of Commendator of the Military Order of Merit from the Brazilian Armed Forces and of Grand Officer of the Order of Rio Branco.

Held the position of Executive Secretary, Communications Services Secretary, and Director of the Tariff Department, at the Brazilian Communications Ministry.

Coordinated the technical teams that elaborated the bills for the Minimum Law and the General Telecommunications Law, having been directly responsible for the negotiations in conjunction with the Brazilian National Congress.

Acted as coordinator for the Special Supervisory Commission and was responsible for the planning and execution of the privatization of the operating companies comprising the TELEBRÁS system.

Currently holds the position of Chairman of the Brazilian National Telecommunications Agency – ANATEL.

Ministerial Roundtable COM.1B

Room C

Wednesday, 12 April 2000	10:45 – 12:30

COM.1B	Americas en route towards the Global Information Society

Chairperson:

H.E. Mr. João PIMENTA DA VEIGA FILHO,
Minister of Communications
(Brazil)

Moderator:

Prof. Eli NOAM,
Director,
Columbia University for Tele-Information (USA)

Panelists:

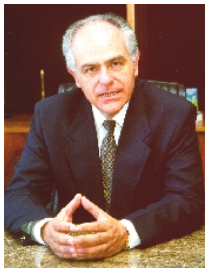
H.E. Ms. Claudia DE FRANCISCO ZAMBRANO,
Minister of Communications
(Colombia)

H.E. Mr. Henoch AGUIAR,
Secretary of Communications
(Argentina)

The Hon. Mr. Philip PAULWELL,
Minister of Commerce and Technology
(Jamaica)

H.E. Mr. Leonid REYMAN,
Chairman,
State Committee for Telecommunications (Russia)

H.E. Mr. Christian NICOLAI,
Under-Secretary of Telecommunications
(Chile)



H.E. Mr. João PIMENTA DA VEIGA FILHO
Minister of Communications

COM.1B

Résumé

Pimenta da Veiga was born in 1947, in Belo Horizonte. Graduated in Law and Social Sciences from the Federal University of Rio de Janeiro in the year of 1972.

He was elected for the Chamber of Deputies for the state of Minas Gerais for the mandates of 1979/83, 1983/87 and 1987/91. In the Chamber of Deputies Pimenta da Veiga participated as an effective member in the Committees for Education and Culture, Law and Constitution, Mines and Energy, and presided over the Special Committee for the New Civil Code, in 1983. He headed the PMDB (Party of the Brazilian Democratic Movement) in the Chamber of Deputies in the period 1985/86. Pimenta da Veiga was one of the founder members of PSDB (Brazilian Social Democratic Party). He was the Party leader in the Chamber in 1988 and its President in January/February of 1989. In 1988, he was elected Mayor of Belo Horizonte and indicated as candidate for Governor of the state of Minas Gerais, in 1990.

In 1994, Pimenta da Veiga was elected National President of PSDB and in the last polls he won a seat in the Chamber representing the state of Minas Gerais for the mandate of 1999/2003.

Nominated as Minister of Communications on January 1st by the President of the Republic.

Mr. Eli M. NOAM
Director
Columbia University for TELE-INFORMATION (USA)

COM.1B

Biography

Eli Noam has been Professor of Economics and Finance at Columbia Business School since 1976. In 1990, after having served for three years as Commissioner with the New York State Public Service Commission, he returned to Columbia. He is the Director of the Columbia Institute for Tele-Information. CITI is an independent university-based research center focusing on strategy, management, and policy issues in telecommunications, computing, and electronic mass media. In addition to leading CITI's research activities, Noam initiated the MBA concentration in the Management of Entertainment, Communications, and Media at the Business School and the *Virtual Institute of Information*, an independent, web-based research facility. He has also taught at Columbia Law School and Princeton University's Economics Department and Woodrow Wilson School.

Noam has published over 19 books and 400 articles in economic journals, law reviews, and interdisciplinary journals. His books include the authored, edited, or co-authored volumes: *Telecommunications in Europe; Television in Europe; Telecommunications Regulation: Today and Tomorrow; Video Media Competition; Services in Transition: The Impact of Information Technology in the Service Industry; The Law of International Telecommunications in the United States; The International Market in Film and Television Programs; Telecommunications in the Pacific Basin; Private Networks, Public Objectives; Global and Local Networks; Asymmetric Deregulation: The Dynamics of Telecommunications Policies in Europe and the United States Telecommunications in Western Asia and the Middle East; Telecommunications in Latin America; Telecommunications in Africa*; *The New Investment Theory of Real Options and Its Implications for Telecommunications Economics*; and *Interconnecting the Network of Networks* (Spring 2000). His forthcoming books include *Media Concentration in the United States* and *Competing for Attention Span.* He has served on the editorial boards of Columbia University Press as well as of several academic journals.

He was a member of the advisory boards for the Federal governments FTS-2000 telecommunications network, the IRS's computer system reorganization, and the National Computer Systems Laboratory. He is a member of the Council on Foreign Relations. He received an AB (*Phi Beta Kappa*), MA, Ph.D. (Economics) and JD from Harvard University.

Sra. Claudia de FRANCISCO ZAMBRANO
Ministra de Comunicaciones
Ministerio de Comunicaciones (Colombia)

COM.1B

Curriculum Vitae

Estudios

Ingeniería Industrial. Universidad de los Andes, 1980

Experiencia

Ministerio de Comunicaciones
Ministra de Comunicaciones, 7 de Agosto de 1998
Mandato Ciudadano por la Paz, la Vida y la Libertad
Gerente de Campaña, 1997
Unión Colombiana de Empresas Publicitarias, Ucep
Presidenta Ejecutiva, 1997-1998
Campaña Presidencial de Andrés Pastrana
Gerente de Campaña, 1994
Organización Luis Carlos Sarmiento Angulo
Asesora de Presidencia de Proyectos en Telecomunicaciones, 1993-1994
Fondo de Promoción de Exportaciones, Proexpo
Vicepresidente Administrativo, 1992-1993
Banco de Colombia
Vicepresidente de Mercadeo, 1990-1992
Empresa de Teléfonos de Bogotá, Etb
Gerente General, 1989-1990
Alcaldía Mayor del Distrito Especial de Bogotá
Secretaría de Hacienda, 1988-1989
Banco de Colombia
Directora de Presupuesto, 1985-1988
Bavaria S.A.
Asesora de Planeación Estratégica, 1980-1985

Sr. Henoch Domingo AGUIAR
Secretary of Communications (Argentina)

COM.1B

Currirulum Vitae

1 Estudios

Estudios primarios y secundarios

Realizados en las ciudades de Montevideo, Buenos Aires, Roma, Bruselas y Buenos Aires (1960-70). Bachiller, medalla de oro.

Universidades de Buenos Aires, Paris I y Grenoble II

Licenciado en Derecho (Diplôme en Droit). (1970-75). Reválida del título otorgada por la Universidad Nacional de Córdoba.

Institut d Études Politiques de Paris (Post-grado)

Diplôme de l'Institut. Section économique et financière. Spécialisation financière et fiscale (1975-77).

IAE, Instituto de Altos Estudios Empresariales

Master en Dirección de Empresas (1983-1984).

2 Actividad académica universitaria

Universidad de Buenos Aires

- *Carrera de Comunicación Social*, *Facultad de Ciencias Sociales*

  Prof. titular, por concurso, de «Derecho a la Información» (1996/03).

  Prof. titular de «Comunicación organizacional» (1994-99).

  Miembro docente de la Junta de Carrera (1996-97).

  Ex prof. titular interino de «Teoría del Estado y de la Planificación» (1992-94).

- *Facultad de Derecho*

  Profesor del post-grado de «Derecho de las Telecomunicaciones» (1995-98).

  Profesor adjunto de «Derecho Constitucional» (1984-85).

  Ayudante, por concurso, de «Derecho Político» (1983-84).

  Dictado del Seminario anual «Derecho a la Información» (1983-85), primer seminario argentino dictado en la materia.

Coordinador y profesor del post-grado de «Derecho de la Información y de las Comunicaciones» (1991).

Universidad de Belgrano

- *Escuela de Economía y Negocios (post-grado)*

  Profesor titular de «Comunicación Empresaria» (1989-98).

  Profesor titular de «Imagen e Identidad de la Empresa» (1995-98).

Universidad Austral

- *Facultad de Derecho*

  Profesor del «Curso de Especialización en Derecho de la Regulación Económica», curso de post-grado (1996-98).

  Profesor del «Programa especial de Telecomunicaciones» (1998).

- *Instituto de Altos Estudios Empresariales (IAE)*

  Profesor de Análisis Socio-Económico y de Análisis de Casos, del Master en Dirección de Empresas (1985).

FLACSO – Facultad Latinoamericana de Ciencias Sociales

Profesor del posgrado de «Opinión Pública y Medios de Comunicación», en Buenos Aires, Córdoba y Rosario (1996-98).

Universidad de Congreso – Mendoza

Profesor de diversos post-grados de Dirección de Empresas, materia Comunicación Empresaria e Institucional (1996-98).

Coordinador y profesor del curso de especialización de Comunicación empresaria (1998).

Otras universidades

- Dicta anualmente cursos de post-grado de comunicaciones y telecomunicaciones en las siguientes universidades:
  – Universidad Católica Argentina.
  – Universidad de San Andrés.
  – Universidad Bar Ilan.
- Ha sido invitado a dictar seminarios y conferencias en las siguientes instituciones académicas:
  – Universidades nacionales de Rosario, Entre Ríos, Córdoba, Mendoza, La Plata, Lomas de Zamora, etc.
  – Instituto del Servicio Exterior de la Nación.
  – Universidad Católica de Salta.
  – UNISINOS, Porto Alegre, Brasil.
  – Universidad de Ciencias Empresariales y Sociales.
  – Universidad Argentina de la Empresa.
  – Universidad John Fitgerald Kennedy, etc.
  – Escuelas Superiores de Defensa y de Guerra.
- Miembro del Jurado en diferentes concursos académicos.
- Designado experto evaluador (ad honorem) de programas curriculares de nuevas carreras de ciencias de la comunicación por el Ministerio de Educación de la Nación.

3 Distinciones académicas

Designado Miembro de Número de la Academia Argentina de Artes y Ciencias de la Comunicación (1996, ad vitam).

4 Actividad pública

Presidencia de la Nación

- Secretario de Comunicaciones (1999)
- Comisión Nacional de Telecomunicaciones

  Miembro del Directorio de la Comisión, elegido por concurso, (1993-95).
- Comité Federal de Radiodifusión

  Miembro, ad honorem, del Consejo Asesor del Comité (1989-90).
- Secretaría de Cultura, Subsecretaría de Radiodifusión

  Miembro, ad honorem, de la Comisión para la redacción de la ley de radiodifusión (1989-90).
- Secretaría General de Presidencia de la Nación

  Asesor del Subsecretario General. Redactor del proyecto de ley de radiodifusión del Poder Ejecutivo Nacional (1987-89).
- Consejo de Consolidación de la Democracia

  Asesor, ad honorem. Redactor del proyecto de ley de radiodifusión del Consejo (1987).
- Secretaría de Información Pública

  Asesor del Secretario. Encargado del proyecto de ley de radiodifusión (1986-1987)
- Subsecretaría de Información Pública

  Asesor del Subsecretario. Redactor de las «Bases para una ley de comunicación audiovisual» (1985-86).

Cámara de Diputados de la Nación

- Comisión de Comunicaciones

  Asesor, participación en los proyectos de telecomunicaciones y radiodifusión presentados por la Comisión (1992-93).

Gobernación de la provincia de Río Negro

Asesor de la Gobernación en materia de telecomunicaciones y radiodifusión (1989-90).

Universidad de Buenos Aires

Miembro de la Comisión Asesora de la Radio AM de la UBA (1996).

Asesor de la Secretaría General del Rectorado (1991-92).

5 Actividad profesional pasada

Estudio Aguiar & Asociados

Socio titular. Estudio experto en estrategias de comunicaciones, telecomunicaciones y radiodifusión (1995-1999).

6 Varios

Miembro del ASPEN FORUM, para la apertura de las telecomunicaciones en Brasil.

Experto designado por concurso del Banco Mundial para la reestructuración del sistema de radiodifusión de la provincia de Tierra del Fuego (1997-98).

Numerosos artículos y reportajes editados en diarios, revistas, radio y televisión.

Conferenciante en Telecom 1992-93-94, en CADAS 1994-95-96-, en ATVC 1994-95-96-97-98, en los encuentros de la American Chamber of Commerce en 1995-96, así como en múltiples seminarios y conferencias (IIR, KPMG, PCS, etc.).

Miembro del Consejo estratégico de «Campus Satelital». Coordinador del área de Comunicación (1998-99).

7 Actividades profesionales anteriores

- **Redactor en Jefe** de las publicaciones económicas de la Cámara Oficial de Comercio de España en París (1975-1977).
- **Asesor del CNPF**, Conseil National du Patronnat Français, monitoreo de capacitación en comunicación empresaria y training de comunicación mediática de empresarios (1977-78).
- **Controller de gestión en P.S.A**., Automobiles Peugeot, Francia, (1978-79).
- **Controller de gestión, como Jefe de Grupo, en SAFRAR**, filial Peugeot y **SEVEL**, filial Fiat-Peugeot, Argentina (1979-81). Responsable de la elaboración del tablero de Información de Control de la Dirección General, así como de las proyecciones económicas a largo plazo.
- **Socio-Director de Medios y Mensaje SRL**, empresa consultora en radiodifusión, telecomunicaciones y comunicación social (1982-84). Producción de programas radiales y revistas. Evaluación de sistemas de educación a distancia. Evaluación de proyectos de inversión en televisión por cable.
- **Director de Relaciones Institucionales del I.A.E**., Instituto de Altos Estudios Empresariales, Universidad Austral, Argentina. Responsable de la comunicación interna y externa del IAE (1984-85).
- **Asesor externo de Kodak Argentina**. Armado del programa de comunicación interna que permitió a Kodak pasar de 46 puntos en el programa internacional de evaluación «Clase A», a más 90 puntos, siendo la primera filial latinoamericana que alcanzó dicha clasificación (1993).
- **Sub-Director** del Servicio de Estudios de la Cámara Española de Comercio en Argentina (1985-1990).

H.E. Mr. Christián NICOLAI
Undersecretary of Telecommunications (Chile)

COM.1B

Biography

The Undersecretary of Telecommunications, Christián Nicolai, has a degree in Civil Electric Engineering from the Universidad de Chile, and broad experience in the telecommunications field.

He began his career in 1979, as a professor in the Electrical Engineering School of the Universidad de Chile, where he carried out teaching and research activities. He specialized in research and teaching in the telecommunications field. He was particularly active in the area of telecommunication economics, where he developed methodologies to measure the social impact of projects, introducing concepts such as marginal cost rate-setting for telephony and other services in Chile.

In 1984 he assumed the post of engineer in the Strategic Planning Department of ENTEL Chile, the only Chilean long-distance operator of the time. He was later named Technical manager of SATEL, a subsidiary of ENTEL Chile which provides corporate satellite communications services.

In 1992 he accepted the position of CEO of a division of the CTC, the largest telephony company in the country. The division, CTC Regional Transmissions is currently known as Telefónica Mundo, which provides long distance services.

He later held the post of Executive Vice-president for Corporate Affairs of Intercom, a subsidiary of Telefónica CTC which provides cable television services, and later became CEO. In 1996 he became Vice-President of Telefónica's Global Network.

In April of 1999 he was appointed Executive Secretary of the Chilean National Energy Commission, an undersecretary-level post. He was encharged with undertaking the rate-setting process for electricity exchange and distribution. He also led the policy generating process for the electric sector, which involved modifying the Electricity Law. During his term this governmental agency led the preparations of the Hydrocarbons Law bill, and of a hydrocarbons infrastructure and territorial organization proposal. The agency also took part in congressional discussions of the Geothermal Law bill.

In March of 2000, he is appointed Undersecretary of Telecommunications of the Lagos Administration.

COM.2

Room H

Wednesday, 12 April 2000	10:00 – 12:00

COM.2	Enhancing Teledensity & Fighting the Digital Divide

Chairperson:

Ing. Jesse Alonso CHACÓN ESCAMILLO,
Director of Operations,
National Telecommunications (Venezuela)

Moderator:

Dr. Danilo PIAGGESI,
Chief, Information Technology for Development Unit,
Inter-American Development Bank (IDB)

Keynote speakers:

Dr. Miguel CANALEJO LARRAINZAR,
Director General,
Alcatel España S.A. (Spain)

Mr. Emmanuel FORESTIER,
Manager,
Telecommunications and Informatics (The World Bank)

Co-Author: **Mr. Carlos BRAGA**,
Director,
InfoDev (The World Bank)

Panelists:

Mr. Genaro Walter PINOS MORA,
Executive President,
EMETEL (Ecuador)

Mr. Juan Manuel LLANO,
CEO,
EMTELSA (Colombia)

Mr. Armando VARGAS-ARAYA,
Vice-President & Regional General Manager,
ICO Global Communications Services Inc. (USA)

Published only:

Ms. Liz-Rejane LEGEY,
Researcher, Production Engineering Programme,
Federal University of Rio de Janeiro (Brazil)

EDI and Internet: Convergence or collision? (192 p.)
Co-author: **Ms. Anne-Marie MACULAN**

Mr. Altaf Hussein DOSSA,
Director,
Centre SYFED REFER Maurice (Mauritius)

Mauritius leading the way to a regional information society (155 p.)

COM.2

Room H

Wednesday, 12 April 2000	10:00 – 12:00

COM.2	Enhancing Teledensity & Fighting the Digital Divide

For a long time, home computer ownership and Internet use has shown significantly lower figures for developing countries. More recently the so-called “digital divide”, the technology gap between the haves and have-nots, has become a major issue with far-reaching implications even in developed countries. While some people are reaping the benefits of the information age, many others don't have access to computers and the Internet. What will happen to them – and to our society – if they don't get online?

On the other hand, the requirement in several developing countries is still significantly different: to provide low-cost basic access with a reasonable basket of important services such as voice communication and the Internet. Telecommunication systems and solutions prevalent in the developed countries are not necessarily the best options for developing countries. There is considerable debate on what it means, and how to achieve it. This session will focus on the particular needs of developing countries and try to identify affordable solutions.

Sr. Jesse Alonso CHACÓN ESCAMILLO
Director de Operaciones
Comisión Nacional de Telecomunicaciones (CONATEL)

COM.2

Biografía

El actual director de operaciones de la Comisión Nacional de Telecomunicaciones (Conatel), Jesse Alonso Chacón Escamillo, es ingeniero de sistemas egresado del Instituto Universitario Politécnico de la Fuerza Armada Nacional (IUPFAN) y posee un posgrado en telemática del Instituto Nacional de Telecomunicaciones de Francia y la Universidad Simón Bolívar de Venezuela.

Además, el director de operaciones de CONATEL es licenciado en Ciencias y Artes Militares de la Academia Militar de Venezuela, egresado en el año 1987.

Se desempeñó como gerente de operaciones y telecomunicaciones en la empresa Industrias Ventane, donde participó en la planificación del plan estratégico y operacional de la Gerencia de Sistemas y Procedimientos. Diseñó e implementó la red de voz y datos de la empresa basado en las tecnologías Frame Relay y ATM.

También desarrolló la metodología de sistemas de la Gerencia, bajo el paradigma de orientación a objetivos, así como la dirección e implementación de numerosos sistemas administrativos y procesos informáticos.

En 1999 ingresa en la Comisión Nacional de Telecomunicaciones como Secretario General donde ha coordinado los equipos de trabajo para llevar adelante el proyecto de la Ley de Telecomunicaciones de Venezuela (actualmente introducida ante el Poder Legislativo), el Plan Nacional de Telecomunicaciones (2000-2012) y el proceso de apertura de la telefonía fija, a ser implementado a partir del 27 de noviembre de 2000, entre otras actividades.

Fue presidente del Encuentro de Reguladores y Operadores de las Américas, realizado en Venezuela en 1999.

Jesse Alonso Chacón Escamillo nació en Caracas, Distrito Federal, el 9 de noviembre de 1965.

Danilo PIAGGESI
Head of the Information Technologies for Development (IDU) Unit
Inter American Development Bank

COM.2

Resumé

Italian, Born April 4, 1956

Head of the Information Technologies for Development (IDU) Unit at the Inter American Development Bank, in Washington D.C., USA, from 1999 to the present. Is in charge of structuring and implementing the Bank's policy to introduce IT in the Bank's project portfolio, as a means to achieve more efficient, equitable, and sustainable development. Is also responsible for providing technical assistance to borrowing member countries, to help better inform government decisions regarding IT and its applications.

Graduated (MA) in Physics. Diploma in geophysics, cum laude, 1980. University of Rome. Executive International Business Certificate, Georgetown University/John Cabot University, Washington D.C-Rome, 1996. Professional training on remote sensing applied to range and pasture management (1981); digital image processing and analysis (1986); technical cooperation project formulation and appraisal (1989); telecommunications (1995-1996).

Worked for the United Nations Food and Agriculture Organization (FAO, Rome) from 1981 to 1990, starting as an Associate Expert at the Forestry Department at the UNDP/FAO detached to Morocco, later turning into staff. Was responsible for several forest resource assessment and energy efficiency projects, utilizing remote sensing technology. Worked as part of the technical staff of TELESPAZIO, Societá per Azioni per le Comunicazioni Spaziali, TELECOM-Italia Group (Rome), between 1990 and 1998. Has also worked as a consultant to the European Union (Brussels, Belgium), as evaluator of project proposals for funding in the field of telecommunications and environment (several dates).

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e-mail: PDANILO@TIN.IT
PDANILO@LIBERO.IT;
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Mr. Miguel CANALEJO LARRAINZAR
President
ALCATEL Latin America Area

COM.2

An Information Society for all

Digital technologies are making possible the building of the Information Society and conducting our world to the Digital Age. Every country will be substantially effected by this new deal, that implies a deep change of political, social and economical behaviours. Moreover, the so called Digital Revolution gives an unquestionable opportunity for less developed countries to fill the existing gaps between nations, increase the cohesion between regions nationwide, and ensure a healthy and sustainable development of society.

The building of an Information Society for all concerns every involved player, either from the public or the private sector, up to a bigger or lesser extent, in such a way that a close cooperation between them is an essential factor to ensure the success of this unique opportunity. The big question is how to articulate the responsibilities and contributions of every agent into a common action plan, based on win-win strategies, to achieve the ultimate goal of taking every nation into the Digital Age.

In the context of an Information Society for all, such a plan has to define strategic objectives in the field of infrastructures deployment, suitable regulatory framework, fostering innovation, business development, electronic economy, education, job creation, health care and improvement of the quality of life for every citizen, in order to build a more cohesive and solidary society.

Every objective has to be split in specific actions with clear steps, budget, schedule and players involved, in light of specific national conditions and priorities. For less developed countries, it is also crucial to take advantage of multilateral financing sources and cooperation programmes implemented by developed countries.

Curriculum Vitae

Navarrese, he is 57 years old. He is married and has 4 sons and 1 daughter. He studied his career at the "Escuela Técnica Superior de Ingenieros Industriales", in Madrid and completed his professional training in the U.K. and France.

In 1967 started off in "Unión Carbide Corporation". From 1977 President as Managing Director of "Unión Carbide Navarra" and "Unión Carbide Ibérica". From 1974 to 1977 he worked for "Sociedad Anónima Navarra de Desarrollo e Inversiones" (SADE).

In July 1984, Mr. Canalejo joined Standard Eléctrica, S.A., as Managing Director. In April 1986, he was appointed Vice President of ITT Europe Inc. In December 1986 he became President of Standard Eléctrica, S.A. In May 1988 he was appointed Vice President of ALCATEL, N.V. and member of the Executive Committee. At present he is Chairman and Chief Executive of ALCATEL España, S.A. President Latin America Area of Alcatel Telecom and Member of the Alcatel Telecom Board.

Mr. Canalejo is a member of the Executive Committee of the "Círculo de Empresarios" (Business Round Table of Spain).

Member of the Governing Council of the Spanish Management Association.

Member of the Advisory Board of Directors of Andersen Consulting.

He has been a Member of the Boards of Ercros, S.A. and Repsol, S.A.

Mr. Emmanuel FORESTIER
Manager, Policy Division
Information and Communication Technology Department
World Bank Group

COM.2

Enhancing Teledensity and Fighting the Digital Divide

Abstract

The "digital divide" – the divide between those with access to new technologies and those without – is now one of the world's leading economic issues. While the potential benefits from advances in information and communication technologies (ICT) appear to be clear for developing countries, fears exist that some less developed countries are being left behind by the information revolution. The effects on inequality are also visible within the countries: low-income people, the less educated and household in rural areas are among the groups that lack access to information resources. But there are measures that countries can take to help close the gap. Connectivity (enhancing teledensity and fostering connection to the Internet) is the goal; competition is the vehicle and education is the enabler. International organizations such as the World Bank are taking actions to help emerging countries cope with these challenges, expand and accelerate the access to ICTs to poor populations, and leapfrog into the information economy.

Outline

The Current Situation

- A teledensity map/summary

Overview of the Recent Trend of Income Distribution

- The Gini index
- The income distribution
- People under poverty line

Information Revolution

- A revolution in terms of industry trends
- Economic impact: economic expansion, composition of economic activity, trade, investment

Digital Divide

- Definition
- Cross-country inequality
  - discrepancy in absolute figures/penetration levels
  - pie illustration of major telecom rollouts

- urban density vs. rural density
- content: websites of local language
- investments in information infrastructure/technology inputs
- index of ICT (Ernie/Francisco study)

- Within-country inequality
  - by income: developing country
  - by education: Australia
  - by geographical region: developing country
  - by race: US
- Convergence or Divergence?
  - Gini for index of ICT: overall divergence
  - traditional technology (mainline): convergence; cutting-edge technology: divergence
  - some countries are doing better than others (e.g. Brazil)

ICT and Development

- What can technology bring to the poor
  - improve services to citizens (assistance in local government planning and coordination)
  - empower people (provide employment, training for women/children, reduce illiteracy)
  - computerization of government offices, government on-line to improve transparency
  - support and social benefits for farmers
  - private sector development (telecenters)
    (with anecdotes such as
    – Electronic support for Health workers in rural India;
    – Grameen Bank members borrow money to purchase cell phones and then sell air time;
    – Sri Lanka: farmers receive higher share for their crops;
    – Kenya: increase the revenues through e-mails;
    – Bangladesh: telecenters in rural areas.)
- Policy implications
  - Connectivity is the goal:
  - Competition is the vehicle: Chile
  - Education is the enabler: Hong Kong and South Korea
- The World Bank Group is taking actions
  - WB/IFC projects at-a-glance summary (in Latin America region)
  - II strategies being developed: issues and agenda

Biography

Emmanuel Forestier, a French national, is Manager of the Policy Division within the Global Information and Communication Technology Department. Staffed with about twenty-five professionals, the division provides assistance to developing countries in the form of advisory services, technical assistance, investment and policy-based loans to modernize the telecommunications sector and apply information technology for economic development. With about ten projects under preparation and a portfolio of $1.5 billion, the division is currently active in about fifty developing countries.

Emmanuel Forestier joined the World Bank in 1979 through the Young Professionals Program and has since amassed a wealth of experience in financial and private sector development. He assumed his current position

in 1997. Prior to this assignment, he was Principal Private Sector Development Specialist in the Middle East and North Africa Region. From 1985 to 1988, he was the World Bank country economist for Côte d'Ivoire, based in Abidjan. Between 1992 and 1994, he was a Senior Banker at the European Bank for Reconstruction and Development (EBRD) in London.

Mr. Forestier graduated from the Institut National Agronomique in Paris where he obtained a degree in engineering, and holds a Master's and a Doctorate in Economics from the Panthéon-Sorbonne University in Paris.

Mr. Armando VARGAS-ARAYA
Vice-President and General Manager for the Americas Region of ICO Global Communications

COM.2

Biography

Armando Vargas-Araya was named Vice-President and General Manager for the Americas Region of ICO Global Communications in September 1999. Previously, he was Vice-President and General Manager for Latin America from April 1997 to August 1999.

Mr. Vargas-Araya has nearly 30 years of experience in telecommunications and the media, and he has five years of government service in communications. Prior to joining ICO he was Director, Government Affairs at UK-based INMARSAT. From 1987 to 1991, he was Secretary-General of the Latin American and Caribbean Broadcasting Union, representing 200 public service radio and TV stations in 19 countries.

From 1982 to 1986, Mr. Vargas-Araya served as Minister of Information and Communication for the government of Costa Rica. During his tenure, the National Telecommunication System increased from 204,633 main lines to 276.359, of which 16% were digital. At the end of the period, 92.6% of the population had network access.

In 1984, he was vice-chairman of the Independent Commission for World Telecommunications Development, which issued the influential report, "The Missing Link."

An author, lecturer and former newspaperman, Mr. Vargas-Araya holds a degree in communications from the University of Costa Rica, where he also was a professor in the School of Communications.

Mr. Vargas-Araya was born in 1946. He is a Costa Rican citizen, is married and has five children.

ICO Global Communications (Nasdaq: ICOFQ) was established in January 1995 as a private company to provide global mobile personal communications services by satellite, including digital voice, data, facsimile, high-penetration notification, and messaging services. ICO Global Communications was listed on Nasdaq in July 1998.

Ms. Liz-Rejane ISSBERNER LEGEY
Researcher, Production Engineering Programme
Federal University of Rio de Janeiro (Brazil)

COM.2

EDI and Internet: CONVERGENCE or COLLISION? Elements provided by the Brazilian Market

Paper prepared to TELECOM AMERICAS 2000

Liz-Rejane Legey and Anne-Marie Maculan

The increase in the intensity of the globalisation process and strengthening of market competition has led firms to reformulate their strategies in reference to the introduction of new production and organizational techniques, based on information and communication technologies (ICT). The awesome application potential of ICT has led businesses to concentrate their efforts on performing their core activities and to discontinue or to outsource some of their secondary activities. In the course of this development, ICT became ever more narrowly enmeshed with the core activity of the firm. In fact these technologies have been increasingly incorporated not only to the internal production processes but to the external business procedures as well, cutting across the traditional spatial, technological, organizational and cultural boundaries separating ICT from the rest of the firm.

EDI (Electronic Data Interchange) is a representative example of this new mode of an ICT implementation. Jonscher (1994) remarked that EDI is an application that represents the new generation of ICT development, characterized by the integration of office and industrial technology. In addition, the application represents the spread of information systems beyond organizational boundaries. Many firms see EDI as a tool of strategic importance where speed and security in communications between business partners are critical. But despite the potential benefits EDI can provide to the organisations, its diffusion is still too limited within business environment. One of the main barriers to the EDI's diffusion is its cost, which hinders Small and Medium Enterprises (SMEs) to adopt it.

The emergence of a radical innovation like the Internet provokes a wave of renewal in the business-to-business relationship. Bottlenecks, which for many years prevented information, to flow among different hardware and software platforms do not exist in the Internet environment. Nevertheless, in terms of electronic commerce, if on the one hand the Internet is the best communication media with respect to cost and size of its network, on the other hand, it is still impossible to assure the same level of safety and reliability provided by specific purpose EDI networks. These latter are vital elements to the business-to-business segment of electronic commerce.

Many experts had declared that the Internet represents a new paradigm for commercial activities and that the current drawbacks are only temporary. Linking firms all over the world, which are interested in buying or selling goods and services electronically, allows the Internet to create an unparalleled virtual global market. Hawkins (1998) points out that electronic commerce relies on a new business philosophy, which is not just that commerce can be conducted electronically, but that it ought to be. The increasing importance of the Internet has been fostering a pessimistic prediction regarding the end of the EDI (electronic data interchange) systems. An alternate view, assert that after the introduction of

new techniques to ensure safety and reliability on the information traffic in the Internet, instead of threatening the EDI, would be a better communication media for the EDI.

Before answering the question of whether commercial transactions taking place in the WWW will use the EDI or another mechanism, it is necessary to know whether the use of an open (virtual) space, like Internet, as a marketplace, may help in the creation of an open market structure (OECD), 1999. The aim of the present work is to analyse the characteristics of the EDI provision and the prospective of the use of the WWW to facilitate transactions among commercial partners, like traditional EDI. The central question is to identify whether the same barriers, which inhibit the diffusion of EDI benefits among firms, will prevail in the Internet environment.

The EDI diffusion is stuck in a sort of "vicious circle", in which the maximization of its benefits will only be reached when all partners are connected to an EDI network. But partners will only join an EDI network, when the expected benefits surpass the costs involved in becoming a user (Legey, L-R, 1998). For this reason, many dominant customers rely on their bargaining power to increase the number of partners in an EDI network.

A related question investigated in this paper, concerns to the long period involved in the negotiation of EDI and in the ways to overcome this problem in the WWW environment. Additionally, it is hoped that the discussion carried here in this paper will shed some light on important elements concerning small and medium firms, which are usually in an unfavourable position in the typical arrangement of an EDI network (Whiteley, 1994).

CURRICULUM VITAE

1 Personal Data

Name**:** Liz-Rejane Issberner Legey

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Brazil

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2 Education

D.Sc. in Production Engineering (area of Innovation Technology and Industrial Organisation) at Coordenação dos Programas de Pós-Graduação de Engenharia da Universidade Federal do Rio de Janeiro (Post-Graduate School of Engineering of the Federal University of Rio de Janeiro), Rio de Janeiro, Brazil (1992-1998). Main area of interest: "Information and communication technologies and the corporations strategic planing"; "Elements of competition in the telecommunications operators context; and The Role of Electronic Commerce in the business restructuring".

M.Sc. in Production Engineering (area of Innovation Technology and Industrial Organisation) at Coordenação dos Programas de Pós-Graduação de Engenharia da Universidade Federal do Rio de Janeiro (Post-Graduate School of Engineering of the Federal University of Rio de Janeiro), Rio de Janeiro, Brazil (l992).

B.Sc. in Economics at Faculdade de Economia e Administração da Universidade Federal do Rio de Janeiro (Economic and Management School at the Federal University of Rio de Janeiro), Rio de Janeiro, Brazil (l978).

3 Present assignment

Researcher at Instituto Brasileiro de Informação em Ciência e Tecnologia – IBICT, since December 1999. Member of the group which is responsible for the preparation of the Green Book, in the Information Society Program, developed by the Science and Technology Ministry in Brazil. The main area of studies is the impact of electronic commerce and its relation with the development of the information society. The focus of the research at IBICT has been in the diffusion of business to business segment of electronic commerce and the perspectives to Small and Medium Enterprises (SMEs).

4 Professional Experiences

4.1 Technical Activities

1978-1990 SERPRO (Federal Service for Data Processing): Social-economic information analyst of the Division for Dissemination of Information, which had the responsibility of the management of the ARUANDA Database Service.

4.2 Academic Activities

4.2.1 Thesis

D.Sc.

- "Adoção e Difusão de Novas Tecnolodias de Informação e Comunicação: o mercado do EDI no Brasil" (The adoption and diffusion of the information and communication technologies: the EDI market in Brazil) – Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, May 1998.

M.Sc.

- "Difusão de Serviços de Disseminacão de Informações Online" (The Diffusion of Online Information Services in Brazil).

4.2.2 Research Projects

- Participation on a Study Programme on the Diffusion of Telecommunications Services in Brazil, at the Centre for Information and Communication Technologies, a Science Policy Research Unit department at the University of Sussex in Brighton, United Kingdom. This research was part of D.Sc. dissertation project, aimed to identify the state of the art in the field of telecommunication and information technologies, concerning the corporate strategies within an environment of services' deregulation (02/1995 to 02/1996).
- "Mudança Tecnológica nas Telecomunicações e suas Implicações Econômicas Sociais e Institucionais na Sociedade Brasileira" (Technological Changes in Telecommunications and its Economical, Social and Institutional Implications in the Brazilian Society). Research assistant in a Consultancy Project developed by Instituto de Economia/UFRJ and COPPE/UFRJ for EMBRATEL: which consisted of: i) several interviews with managers and technical staff of Brazilian public and private enterprises in the telecommunication services sector; ii) an extensive survey of the recent national and international literature on communication technology; and iii) a comprehensive report comprising an analysis, a diagnosis and the perspectives of the Brazilian telecommunication sector in an deregulated environment (03/1994 to 09/1994).
- "Plano Estratégico da Cidade do Rio de Janeiro" (Strategic planning of Rio de Janeiro city). Subcontracted to develop a portion of the main project, concerning a preliminary diagnosis of the recent performance of the financial sector, foreign trade, tourism and foreign direct investment, in the city of Rio de Janeiro, (10/1994).
- "Comércio Eletrônico no Estado do Rio de Janeiro: Desafios para uma Política" (Electronic Commerce in Rio de Janeiro State: Challenges for a Policy). Project sponsored by Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro – Faperj, developed at Programa de Engenharia de Produção da COPPE /UFRJ during the year of 1999.

4.2.3 Scholarships and awards

- Award: CYTED – Programa Ibero Americano de Ciencia y Tecnologia para el Desarrolo (Iberian and American Programme on Science and Technology for the Development), a Scientific Research Institute in Venezuela, for the M.Sc. dissertation. This work was selected to be published, among the nine best Spanish and Portuguese language dissertations (master and doctoral degrees), produced in the period of 1989-1992, in the field of technological innovation
- Scholarship to Doctoral Studies Abroad

  Institution: University of Sussex, United Kingdom

Sponsor: Conselho Nacional de Desenvolvimento Científico e Tecnológico – CNPq (National Council for Scientific and Technological Development)

Period: 02/1995 to 01/1996

- Scholarship to Doctoral Studies

  Institution: COPPE/UFRJ

  Sponsor: Conselho Nacional de Desenvolvimento Científico e Tecnológico – CNPq (National Council for Scientific and Technological Development).

  Period: 07/1992-01/1995 and 02/1996-02/1998

- Scholarship to Master Studies

  Institution: COPPE/UFRJ

  Sponsor: Conselho Nacional de Desenvolvimento Científico e Tecnológico – CNPq and Coordenação de Aperfeiçoamento de Pesoal de Ensino Superior – CAPES (Department for Development of Graduate Personnel).

  Period: 07/1992-01/1995 and 02/1996-02/1998

Articles and Monographs

Organização e Dinâmica do Mercado de EDI no Brasil" *Guia de EDI e Comércio Eletrônico*. Instituto Brasileiro para Simplificação de Procedimentos Mercantis – Simpro Brasil, 1999.

- "As Experiências Internacionais de Regulação para as Comunicações e a Reestruturação dos Serviços" (with. A.M Maculan) *Revista de Economia Política vol 16, n* 4º (64), October-December/96.
- "Um Novo Sistema de Regulação das Telecomunicações no Brasil: As Experiências lnternacionais e os Elementos para a Reestruturação dos Serviços de Telecomunicações", *Documentos 22 Série 5 Telecomunicações: Mudança Tecnológica e suas Implicações Econômicas, Sociais e Institucionais*, Instituto de Economia da Universidade Federal do Rio de Janeiro, 1995.
- "Difusão dos Serviços de Disseminação de Informações *Online* no Brasil", *Cadernos de Gestão Tecnológica*, 12 CYTED/Núcleo de Política de Ciência e Tecnologia da Universidade de São Paulo/USP, 1994.
- "Modernização das Telecomunicações no Brasil: Alternativas à privatização" (com A. M. Maculan e P. Wanke), paper presented at the *VII Congresso Latino-Ibero Americano de Investigaciones Operativas e Ingeneria de Sistemas*, Santiago/Chile, Julho de 1994.
- "Transição da Indústria de Informática: Estratégia de Reestruturação de uma Firma Brasileira" presented at *I - Workshop: Estratégias Empresariais em Software*, COPPE/UFRJ, Rio de Janeiro, 25 de Novembro de 1993.
- "Transferência de Tecnologia em Serviços de Informação On-line" para a capacitação das Empresas": *Workshop: Inovação Tecnológica: Desafios e Perspectivas*, COPPE/UFRJ, Rio de Janeiro, 1 e 2 de Outubro de 1992.
- "The Diffusion of Online Services in Brazil" paper accepted at the *XVIII - International Association for Mass Communication Research Conference - Communication Technology Policy Section*, 16-23 de Agosto de 1992, Guarujá, SP.

5 Professional Associations

Instituto dos Economistas do Rio de Janeiro (Economic Institute of Rio de Janeiro)

6 Languages

Portuguese: read, write, speak

English: read, write, speak

Spanish: read, write a little, speak a little

French: read, write a little, speak a little

COM.3

Room H

Wednesday, 12 April 2000	13:30 – 17:00

15:00 – 15:30 coffee break

COM.3	IT Revolution – New governance & provision of public services

Chairperson:

H.E. Mr. George CALIXTE,
Minister of Communications, Works, Transports & Public Utilities (Saint Lucia)

Moderator:

Mr. Ben PETRAZZINI,
Policy Analyst
(ITU-SPU)

Keynote speakers:

H.E. José Manuel VILLAR URÍBARRI,
Secretario General de Comunicaciones,
Ministerio de Fomento (Spain)

Ing. Marcelo LOPEZ ARJONA,
Secretary-General,
ASETA (Ecuador)

Mr. William NALASCO BARRETO,
NEC Do Brasil S.A. (Brazil)

Panelists:

Mr. Guido LOAYZA MARIACA,
Superintendente de Telecomunicaciones
(Bolivia)

Mr. José SORIANO,
President and *Director General*,
Red Científica (Peru)

Mr. Apollo KNIGHTS,
Head, Telecommunications, Ministry of Communications and Works
(St. Vincent & the Grenadines**)**

COM.3

Room H

Wednesday, 12 April 2000	13:30 – 17:00

15:00 – 15:30 coffee break

COM.3	IT Revolution – New governance & provision of public services

Globalization has often been described as the fading of national borders and a reduction in the prerogatives and relevance of nation states. Nowhere more than in the fields of information technologies, telecommunications, the Internet and electronic commerce has the "leading role" of private business been hailed. Deregulation, privatization and greater reliance on market mechanisms have progressively become the rule, resulting in significant benefits for a large number of developing countries.

As businesses and governments have been progressively accepting and endorsing these new responsibilities, unprecedented challenges have emerged and new issues have had to be addressed. On the one hand, good governance has become a recurring theme of discussion and negotiation, both in public and private circles. The social, cultural and political dimensions of planetary information networks have become major elements in ongoing debates about the management, architecture and rules of such networks. On the other hand, traditional responsibilities of governments regarding, for example, education, universal access and services, and social equity have been subject to review and sometimes reformulation.

From a global point of view, the issue of a possible "digital divide" needs to be considered as a matter of common concern in which national governments, private enterprises and relevant international organizations all have important roles to play. From a national and regional point of view, the specific situations of individual developing countries (especially the least developed countries) as well as poverty-stricken areas such as most of the African continent will require special attention. Latin America and the Caribbean have benefited from several positive regional cooperation efforts in areas related to IT and telecommunications: how have such efforts affected governance and the provision of public services, and how can the experience be of benefit to other developing countries?

What has been the experience so far in various developing countries? How do local players, private and public, assess the progress achieved, the obstacles remaining and the main challenges to be addressed in the year 2000 and beyond? What should governments, private businesses and international organizations regard as their respective priorities to ensure that developing countries – and those in Latin America and the Caribbean in particular – benefit fully from, and contribute fully to, the emerging global information society?

Mr. George CALIXTE
Honourable Minister
Minister of Communications, Works, Transport & Public Utilities –- St Lucia

COM.3

Biography

Honourable Calixte George was born a Roman Catholic on October 14, 1938. He resides in the Community of Grande Riviere, Quarter of Gros Islet in Saint Lucia. He is married to Alvina Marie Joan George, a Home Economist and they have five children.

Honourable Calixte George received his Bachelor of Science Degree (Agriculture) at the University of the West Indies, Faculty of Agriculture in Trinidad and pursued his Masters Degree in Soil Science – Soil Chemistry at the University of Reading, Berkshire, England where he carried out a study on some aspects of Soil Phosphate.

Honourable Calixte George served as Managing Director of the St. Lucia Banana Growers Association and Executive Director of Caribbean Agricultural Research and Development Institute between the years 1990 to 1995, prior to his appointment as Minister of Communications, works, Transport and Public Utilities.

Other employment positions he held in earlier years include Science Master at St. Mary's College, St. Lucia, Agronomist at Windward Islands Banana Research and Chief Agriculture Officer at the Ministry of Agriculture, St. Lucia.

Mr. George has considerable experience and has carried out extensive research in the field of agriculture. He has also written many publications on that topic, the most recent being Regional Agricultural Research Policy and implementation and Science and Technology in the Caribbean in 1992.

Dr. Ben Alfa PETRAZZINI
Asesor
Unidad de Políticas y Estrategias de la Secretaría General de la Unión Internacional de Telecomunicaciones (UIT)

COM.3

Biografía

Ben Alfa Petrazzini es Asesor en la Unidad de Políticas y Estrategias de la Secretaríia General de la Unión Internacional de Telecomunicaciones (UIT). Desde 1998 se dedica a temas de comercio electrónico y nuevas tecnologías como la Internet. El Dr. Petrazzini dirige estudios en nuevas tecnologías de la comunicación y realiza regularmente presentaciones en conferencias internacionales, asesora en temas de desarrollo estratégico en telecomunicaciones y representa a la UIT en asuntos relacionados con otros organismos internacionales como la Organización Mundial del Comercio, el Banco Mundial y la OCDE. Entre 1994 y 1997 fue Profesor en Telecomunicaciones de la Escuela de Negocios de la Universidad de Ciencia y Tecnología de Hong Kong. Petrazzini tiene un Doctorado en Comunicaciones en la Universidad de California, San Diego, Estados Unidos. Es autor de una importante cantidad de artículos, reportes y libros en temas de telecomunicaciones. Sus últimos estudios («Challenges to the Network» - 1999 y 1997) se han concentrado en el análisis de Internet como instrumento para el desarrollo económico y sirven de material de consulta a empresas y gobiernos de diversos países.

Biography

Ben A. Petrazzini is Regulatory Affairs Advisor with the Strategies and Policy Unit, Office of the Secretary General, of the International Telecommunication Union. Mr. Petrazzini holds a Ph.D. in Communication from University of California, San Diego, a law degree and an MA in Social Sciences. He was Assistant Professor at the Department of Information and Systems Management of The Hong Kong University of Science and Technology. He also served as an advisor to the National Congress of Argentina, and taught at the National University of Buenos Aires. More recently he has consulted with government and private enterprises on telecommunications matters and published extensively on market reform and regulatory matters of the telecommunications sector in developing countries.

Sr. Marcelo LÓPEZ ARJONA
Secretario General
ASETA

COM.3

Vision Estrategica de las Telecomunicaciones Andinas

La presentación tendrá una primera parte en la que se hará un análisis de la Situación Actual de las Telecomunicaciones Andinas, cubriendo aspectos como:

- La reestructuración del sector y el marco normativo tanto en los Países Miembros, en forma individual. Como a nivel comunitario
- La situación y tamaño del mercado y servicios (penetración, calidad, tarifas, etc.)
- La situación de las empresas operadoras y
- El rol desempeñado por ASETA (foro integrador, áreas de actuación y proyectos que adelanta).

A continuación en su segunda parte, la presentación mostrará la Visión Estratégica de las Telecomunicaciones Andinas, con la apreciación de ASETA acerca del escenario probable que se tendrá en la Comunidad Andina al final del periodo 2000-2005, en lo relativo a:

- Estructura del sector y marco normativo
- Convergencia tecnológica de redes y servicios
- Empresas Operadoras globalizadas
- Nuevo rol de ASETA.

Curriculum Vitae

Name	Marcelo Lopez-Arjona
Date of birth	2 January 1942
Profession`	Electrical Engineering, Business Administration

Professional Experience

He was a Private Consultant for twenty-five years and has participated in many important projects in electrical and telecommunications sectors.

He has been the Secretary, Vice-President and President of National Association of Electrical and Electronics Engineers of Ecuador and President of Society of Engineers and Architects of Ecuador.

He has been Vice-President of Pan-American Congress of Mechanical and Electrical Engineering and Related Fields as Ecuador's Representative.

He has also a full professor at the National Polytechnic School of Ecuador.

His most important positions have been:

- Ecuadorian Electrification Institute – Design and construction engineer for electrical and telephone networks
- Quito Electric Company Inc. – Construction and Design Engineer
- INELIN CIA LTDA – Consulting Engineer
- Quito Electric Company Inc. – Executive Director for a cargo dispatch centre. Projects and Protection of Systems, in association with ELC, Electro Consult of Milan, Italy
- Director of ASTEC-ICA-INELIN (ASINCA), Association for the Paute Hydroelectric Project. INECEL. Within this Association he worked on many projects as Executive Director for INECEL in various parts of the country
- Advisor to the Under-Secretary of Natural and Energy Resources
- Member of the IETEL Board of Directors. (Ecuadorian Telecommunications Enterprise), representing the Engineers Society of Ecuador
- Alternate Representative for the Vice-President of Ecuador on IETEL Board of Directors (IETEL – Ecuadorian Telecommunications Enterprise)
- General Manager of the Instituto Ecuatoriano de Telecomunicaciones (IETEL – Ecuadorian Telecommunications Enterprise)

He has attended numerous events abroad as well as in Ecuador.

Distinctions

Elected President of Rotary Club "Quito Colonial"

Member of the New York Academy of Sciences

Current Position

Secretary-General of the Association of Telecommunications Enterprises of the Andean Community (ASETA).

Mr. William NALASCO BARRETO
NEC do Brasil S.A. (Brazil)

COM.3

The Importance of National Information Infrastructure in the New Global Economy

Abstract

The worldwide economy is changing drastically and the role and importance of State Nation will suffer dramatic influence as a consequence of this paradigm shift. In The New Global Scenario of Economy fundamental forces of economy: Communication, Capital, Corporation and Consumers shall move in bordless way from region to region without considering rules established by bureacratic State Nation entities.

The key factor of Region State be capable to attract the bordless fundamental forces of economy are to obtain a set of conditions. And one of this important condition is to preserve the availability of a Information Infrastructure able to support the flow of Information to abroad environment without restriction. This theory are defended by Ohmae Kenichi since 80's decade.

Several countries considered as undeveloped countries are planning strategic investment preparing to this new world,one of pioneer was MSD – Malaysia Super Corridor promoted and under construction by Premier Marratier. President Fernando Henrique Cardoso has just launched a national program to preparation of Brazil for this new era.

There are a lot of competences involved in a Information Infrastructure and the a important role for IT vendors are waiting in this new Society.

I would like to provide a brief presentation of MSD the program of Mr. Cardoso, the way in which the competences of an NII may be segmented and the role of the IT Vendor in this new environment.

Sr. Guido LOAYZA MARIACA
Ingeniero en Telecomunicaciones
Universidad Nacional de La Plata – Argentina
Superintendente de Telecomunicaciones
(Bolivia)

COM.3

Estudios de especialización

Transmisión por microondas (Inglaterra), radiodifusión y televisión (Inglaterra), electromedicina, telefonía, luminotecnia, telecomunicaciones, electroacústica, radares, equipos para aeropuertos (Holanda, Italia, Alemania, Inglaterra, Canadá), sistemas de comunicaciones DIGITALES, transmisión y conmutación (Francia), microprocesadores (Alemania), electroacústica y electromedicina (Holanda), administración de proyectos, procedimientos gerenciales de mantenimiento de proyectos y manejo de recursos humanos (Estados Unidos), economía de la regulación (Bolivia).

Experiencia profesional (28 años)

Presidente y Gerente General de EPTA Ingeniería, Representante de Alcatel en Bolivia, Gerente Comercial de Industrias Bolivianas Philips S.A., Consultor en telecomunicaciones en Bolivia y el exterior de las firmas EPTA, Philips, Telspace, Pel, Consultex, Standard Electric S.A., Slide-Aeroport de París, PTI, Fariñón, ENTEL para los proyectos DOMSAT, Red y Enlace Troncal Digital, Red Nacional de Télex, entre otros.

Asesor nacional e internacional en el campo de las telecomunicaciones.

Docente universitario

Universidad Nacional de La Plata – Argentina, Universidad Mayor de San Andrés, Fuerza Aérea Boliviana, Escuela Militar de Aviación, además de Ingeniero Instructor de General Electric Co., ENTEL y AASANA.

Autor de diversas publicaciones

Artículos especializados en telecomunicaciones publicados en revistas internacionales.

Contribuyó a la publicación de Telecomunicaciones en América con el texto: Telecomunicaciones en Bolivia.

Cargos electivos

Senador electo de la República de Bolivia.

Bolivia: Regulación de las telecomunicaciones

Avances y resultados

Introducción

El objetivo del presente documento es el de hacer una evaluación histórica de las transformaciones fundamentales que se han producido en la prestación de los servicios públicos de telecomunicaciones en Bolivia, particularmente se realiza este análisis a través de la revisión de la privatización del principal operador de telecomunicaciones y sus resultados más importantes; la creación de un sistema regulatorio y la consolidación de la gobernancia regulatoria; así como la identificación de los principales obstáculos afrontados hasta el momento y los retos fundamentales que quedan para poder integrar cada vez a más bolivianos a la sociedad de la información.

1 Antecedentes

En los últimos años una verdadera revolución ha transformado el sector de las telecomunicaciones no sólo en Bolivia sino en toda América Latina.

En el pasado, el esquema de prestación de los servicios básicos de telecomunicaciones era el de control del sector público; como en otros campos el Estado estaba encargado de satisfacer la demanda a través del operador público, extender la cobertura del servicio y ofrecer tarifas accesibles a la mayor parte de la población.

Si bien existía un órgano regulador especializado[1], era constantemente criticado por su falta de independencia, y porque muchas de sus decisiones se tomaban en función a determinaciones partidarias. A partir de 1970 el sector de las telecomunicaciones estuvo regulado por una ley especializada[2] sin embargo la poca claridad de los trámites administrativos establecidos se prestaba a la corrupción, y por otra parte la acelerada evolución tecnológica y la nuevas tendencias de la economía mundial, hicieron que esta norma se torne obsoleta y con grandes vacíos sobre todo respecto a los nuevos servicios.

1.1 Estructura de la industria

La estructura de la industria antes de las reformas era la siguiente:

Existían tres empresas monopólicas para los servicios de larga distancia, local y móvil celular. La empresa monopólica estatal, ENTEL prestaba los servicios de larga distancia nacional e internacional, telex, telegrafía, satélite, telefonía rural y teléfonos públicos, a las nueve ciudades capitales bolivianas y algunas ciudades secundarias.

Quince cooperativas telefónicas tenían el monopolio del servicio local, cada una en su localidad, y finalmente una empresa privada constituía el único prestador del servicio móvil celular.

Contrariamente a este panorama, el de los servicios no básicos como el de la radiodifiusión y la televisión enfrentaban un alto nivel de competencia, con un elevado número de empresas privadas y cooperativas prestando servicios en todas las ciudades capitales bolivianas, teniendo varias de ellas alcance nacional e internacional, existiendo además la radioemisora y canal estatal con alcance nacional.

Existían también empresas privadas que prestaban el servicio de televisión por suscripción, poco desarrollado en ese momento.

2 Cambio de escenario

En los años 80 este esquema comenzó a mostrar sus debilidades, se hace clara la percepción del fracaso de la concepción del Estado empresario. Si bien ENTEL estatal había logrado importantes ganancias en eficiencia interna, que inclusive superaron los niveles iniciales de eficiencia posteriores a su capitalización, y en general la calidad de sus servicios era buena, no existía la capacidad estatal para cubrir las necesidades de inversión y de mejoramiento de tecnología, necesarios para ampliar la cobertura y elevar la calidad de sus productos.

El monopolio de la telefonía local, responsable del suministro del servicio básico, enfrentaba graves problemas, que se manifestaban en hechos concretos, como el pobre desarrollo de la red, baja productividad, ingresos inadecuados, tarifas subvencionadas y un catálogo de servicios muy reducido.

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[1] La Dirección General de Telecomunicaciones (D.G.T.), era el órgano técnico-administrativo de fiscalización de las telecomunicaciones dependiente del Ministerio de Transportes y Comunicaciones, debido a esta relación no existía una delimitación clara de funciones, al ser el propio Estado el que concentraba las tareas de prestación de servicios, operación y regulación.

[2] Ley General de Telecomunicaciones (D. S. 9740 del 2.6.71) y el Reglamento General de Telecomunicaciones (D. S. 17730 del 20.10.80).

Estos elementos y la toma de conciencia de la importancia decisiva que tiene el sector para el desarrollo de la economía en general impulsó al país a tomar acciones.

2.1 Capitalización

La principal empresa operadora de las telecomunicaciones de Bolivia, ENTEL fue capitalizada en noviembre de 1995[3] por la antigua STET International, hoy Telecom Italia-Olivetti por un monto total de 610 millones de dólares a ser invertidos en un plazo de 6 años.

Telecom Italia-Olivetti es propietaria del 50% de las acciones de ENTEL y el otro 50% fue transferido a los ciudadanos bolivianos que a la fecha de la capitalización tenían 21 años cumplidos, sin embargo éstas no fueron distribuidas entre sus beneficiarios, sino pasaron a Fondos Privados de Pensiones, que están encargados de su administración.

Además del 50% de las acciones de ENTEL, Telecom Italia se encarga de la administración de la empresa y tiene exclusividad en el servicio de larga distancia por 6 años, periodo que concluye en noviembre del 2001.

Esta reforma del sector de las telecomunicaciones llegó aparejada con un cambio en el tipo de Estado que concentró hasta ese momento las tareas productiva, normadora y reguladora, produciéndose una redefinición de roles de los actores más importantes:

El Estado, que antes concentraba las tareas normadora, reguladora y productora reservó para sí las dos primeras, encargando al Poder Ejecutivo la labor normadora y creó las Superintendencias Sectoriales como entes autárquicos para que se dediquen exclusivamente a la regulación; a partir de ese momento las empresas del sector privado se constituyeron en las responsables de la producción y prestación de los servicios.

2.2 Nuevo sistema regulatorio

Como una parte de la ejecución de estas reformas, se vio la necesidad de instituir la regulación a través de un ente independiente para hacer el control de la empresa recientemente privatizada bajo la modalidad de capitalización.

Al haberse realizado la capitalización del operador de telecomunicaciones al mismo tiempo que la de las empresas de electricidad, aguas, hidrocarburos y transportes, se optó por la instauración de un Sistema de Regulación Sectorial[4] (SIRESE) creado con el objetivo de regular, controlar y supervisar las actividades de todos estos sectores.

Este sistema está compuesto por cinco agencias especializadas o Superintendencias Sectoriales, como se las denomina, y una Superintendencia General que constituyen personas jurídicas de derecho público con jurisdicción nacional y autonomía de gestión técnica, administrativa y económica.

El modelo boliviano de conformación de los entes de regulación sectorial es singular, debido a su funcionamiento como sistema que instituye una competencia virtual entre las cinco Superintendencias Sectoriales respecto a la eficacia y eficiencia en su desempeño, aspectos que son fiscalizados por la Superintendencia General, la que emite una opinión anual al respecto.

2.3 Objetivos de la regulación

El objetivo fundamental de la regulación en Bolivia es el de regular, controlar y supervisar las actividades bajo su jurisdicción asegurando eficiencia de las empresas reguladas, amplio acceso a los servicios, protección a los intereses del Estado, empresas y usuarios y desarrollo económico y social del país.

Las atribuciones del ente regulador de las telecomunicaciones, SITTEL, que deben traducirse en el logro de los objetivos o misión de SITTEL ,son las siguientes:

- Promoción de la competencia
- Otorgación de derechos: concesiones, licencias y registros
- Supervisión de los servicios
- Aprobación de tarifas y tasas contables
- Aplicación de sanciones
- Atención de reclamos y controversias
- Proposición de normas y reglamentos
- Control del espectro
- Establecimiento de estándares técnicos
- Colección y difusión de información.

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[3] Ley de Capitalización de 21.3.94.

[4] El Sistema de Regulación Sectorial fue creado mediante Ley 1600 del Sistema de Regulación Sectorial del 28.10.1995. La Superintendencia de Telecomunicaciones (SITTEL) inició sus actividades el 24 de noviembre de 1995 como el ente regulador de las telecomunicaciones y parte integrante del SIRESE.

El marco legal establece claramente una delimitación de las funciones y deberes del ente regulador, de forma que la regulación pueda ser más efectiva, eliminando la posibilidad de que existan labores a ser desempeñadas de manera conjunta con el Ministerio correspondiente, que según la legislación debe remitirse a normar, y SITTEL a cumplir las leyes y regular.

El nuevo marco regulatorio al que debe regirse el ente de regulación de las telecomunicaciones[5] es un conjunto normativo completo para ejercer la regulación en Bolivia.

3 Gobernancia regulatoria

El régimen regulatorio en Bolivia permite identificar un alto grado de desarrollo en aspectos clave que hacen a la gobernancia regulatoria, prueba de ello es el resultado obtenido en un estudio realizado por la Corporación Andina de Fomento (C.A.F.) acerca del riesgo regulatorio en países andinos, que determinó que Bolivia sea considerado el país con menor riesgo regulatorio y por tanto como que el presenta menor riesgo sectorial para realizar inversiones.

3.1 Autonomía/Independencia

Del marco regulatorio boliviano se establece que SITTEL tiene un alto grado de independencia que se traduce en:

- Una relación a distancia con las firmas reguladas, con los consumidores, y con otros intereses privados.
- Una relación a distancia con autoridades políticas gubernamentales.

El Superintendente de Telecomunicaciones es elegido por el Presidente de la República de una terna propuesta por el Senado Nacional y tiene un periodo fijo de cinco años no pudiendo ser reelegido sino pasado un tiempo igual al que ejerció su mandato, durante este tiempo no puede ser removido por ninguna autoridad, incluido el Presidente, la destitución sólo es posible en virtud de una sentencia ejecutoriada por delitos cometidos en el ejercicio de sus funciones.

Las actividades de la Superintendencia de Telecomunicaciones se financian mediante la tasa toria que pagan los operadores de telecomunicaciones. Esta tasa se aplica por persona individual o colectiva, independientemente de la cantidad de concesiones, licencias o registros de que sea titular hasta un 1% anual de los ingresos brutos de operación del año anterior.

3.2 Transparencia

El ente regulador manifiesta sus decisiones debidamente fundamentadas a través de Resoluciones Administrativas, las que tienen carácter público, por lo que cualquier persona natural o jurídica puede acceder a ellas; adicionalmente por mandato legal SITTEL publica trimestralmente un boletín en el que se incluyen las resoluciones dictadas en ese periodo.

Asimismo el marco regulatorio establece la obligatoriedad de SITTEL de poner a disposición del público un listado de los contratos de concesión, licencias y registros otorgados por el ente regulador, con información acerca del titular, área de concesión y vigencia de la autorización, así como copias de los contratos de concesión.

3.3 Rendición de cuentas/Responsabilidad

Las decisiones de SITTEL están sujetas a una secuencia de instancias administrativas y una instancia judicial, procedimiento apegado a las reglas del debido proceso, dando la oportunidad a los regulados a demandar de forma efectiva las decisiones del ente de regulación que se consideran injustas, incompetentes y fuera del marco legal.

- **Recurso de revocatoria,** es la vía administrativa, para que cualquier persona natural o jurídica, pública o privada, que se considere afectada por una resolución de SITTEL pueda impugnarla en primera instancia ante la misma superintendencia, dando la oportunidad al órgano regulador de que revise sus propias decisiones.
- **Recurso jerárquico** ante la Superintendencia General, en caso de que el recurrente considere que la resolución que resuelve el recurso de revocatoria continúa afectando sus intereses legítimos, puede interponer un Recurso Jerárquico ante la Superintendencia General, la que se pronunciará confirmando la resolución de la Superintendencia Sectorial o desestimando el recurso. La resolución del Recurso Jerárquico agota el proceso administrativo.
- **Demanda contencioso-administrativa** ante la Corte Suprema de Justicia, en caso de que el recurrente considere que la resolución del

[5] El marco regulatorio está constituido por la Ley 1600 del SIRESE y sus reglamentos (D.S. 24504 y D.S. 24505) y la Ley 1632 de Telecomunicaciones y su reglamentación (D.S. 24132).

Recurso Jerárquico continúa perjudicando sus intereses, puede presentar una demanda ante la Corte Suprema de Justicia como última instancia de apelación y en el ejercicio del control jurisdiccional.

3.4 Grado de predicibilidad de las acciones del cuerpo regulatorio

El marco regulatorio boliviano otorga un nivel bastante razonable de confianza a operadores, inversionistas y consumidores de que las reglas de juego no serán modificadas, toda vez que las funciones y atribuciones del ente regulador están establecidas en una Ley de la República que sólo puede ser modificada por otra ley, que tendría que ser sancionada en el Congreso por dos tercios de votos de los congresales.

Las decisiones emitidas por el ente regulador a través de las Resoluciones Administrativas, si bien pueden ser impugnadas por la vía administrativa, no pueden ser de ninguna forma cambiadas por una determinación del gobierno a través de sus ministerios o de cualquier otra forma que no está contemplada en el procedimiento administrativo.

3.5 Claridad en las responsabilidades y papel del órgano regulador

El marco legal delimita claramente el ámbito de acción de SITTEL a todas las actividades de telecomunicaciones, que comprenden la transmisión de señales, símbolos, textos imágenes fijas y en movimiento, voz, sonidos, datos o información de cualquier naturaleza, o aplicaciones que facilitan los mismos, por cable o línea física, radioelectricidad, ondas hertzianas, medios ópticos y otros sistemas electromagnéticos de cualquier índole o especie.

La legislación boliviana establece que el ente regulador es un órgano de toma de decisión al tener la atribución de aprobar tarifas, tasas contables, supervisar y autorizar los acuerdos de interconexión, resolver controversias entre operadores y reclamaciones de los consumidores contra los operadores e imponer sanciones.

4 Desarrollo del mercado de los servicios públicos

4.1 Estructura de la industria

Debido a los periodos de exclusividad en la prestación de servicios básicos otorgados a ENTEL S.A. y a las cooperativas[6] –sobre los servicios de larga distancia y local respectivamente a tiempo de realizarse las reformas del sector– la estructura de la industria aún no ha experimentado grandes alteraciones, sin embargo este panorama está próximo a cambiar, debido a la liberalización de estos mercados en noviembre del 2001.

Las cooperativas telefónicas continúan con la tarea de prestar servicios de telefonía local y ENTEL S.A. los servicios de larga distancia nacional e internacional, satélite, télex, telegrafía y el servicio local en aquellos lugares donde no existen cooperativas.

Los hechos más importantes ocurridos en este período posterior a la capitalización, fueron el ingreso de ENTEL Móvil como segundo operador de telefonía móvil celular en 1996, dando lugar a un duopolio que compite vía precios, y el segundo evento importante –cronológicamente hablando fue la adjudicación de la segunda banda PCS a un tercer operador de telefonía móvil[7] que tiene previsto su ingreso al mercado boliviano en este año 2000. También tiene relevancia para la estructura de la industria la tendencia del mercado a tomar ventaja de las economías de ámbito, al momento dos de las cooperativas más importantes –que prestan el servicio local– ya obtuvieron concesiones para proveer el servicio de televisión por cable. Las tres cooperativas más importantes del país son COTEL, COTAS y COMTECO que presta sus servicios en los departamento de La Paz, Cochabamba y Santa Cruz, respectivamente.

Las empresas que prestan servicios de valor agregado llegan a 8 y las de buscapersonas son 9.

El mercado de los servicios no básicos se presenta bastante competitivo existen 12 empresas de televisión por cable, 98 empresas de televisión, siendo varias de ellas de carácter nacional, 345 radios, 473 redes privadas, 3 empresas de transmisión de datos y 1 106 radioaficionados, haciendo un total de más de 2000 operadores regulados.

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[6] La Ley de Telecomunicaciones establece un periodo de exclusividad de 6 años para los servicios de larga distancia y local en favor de ENTEL S.A. y las cooperativas telefónicas, éste concluye en noviembre del 2001.

[7] La segunda frecuencia de PCS fue otorgado mediante licitación pública al consorcio formado por la empresa Western Wireless y la cooperativa de teléfonos bolivana COMTECO.

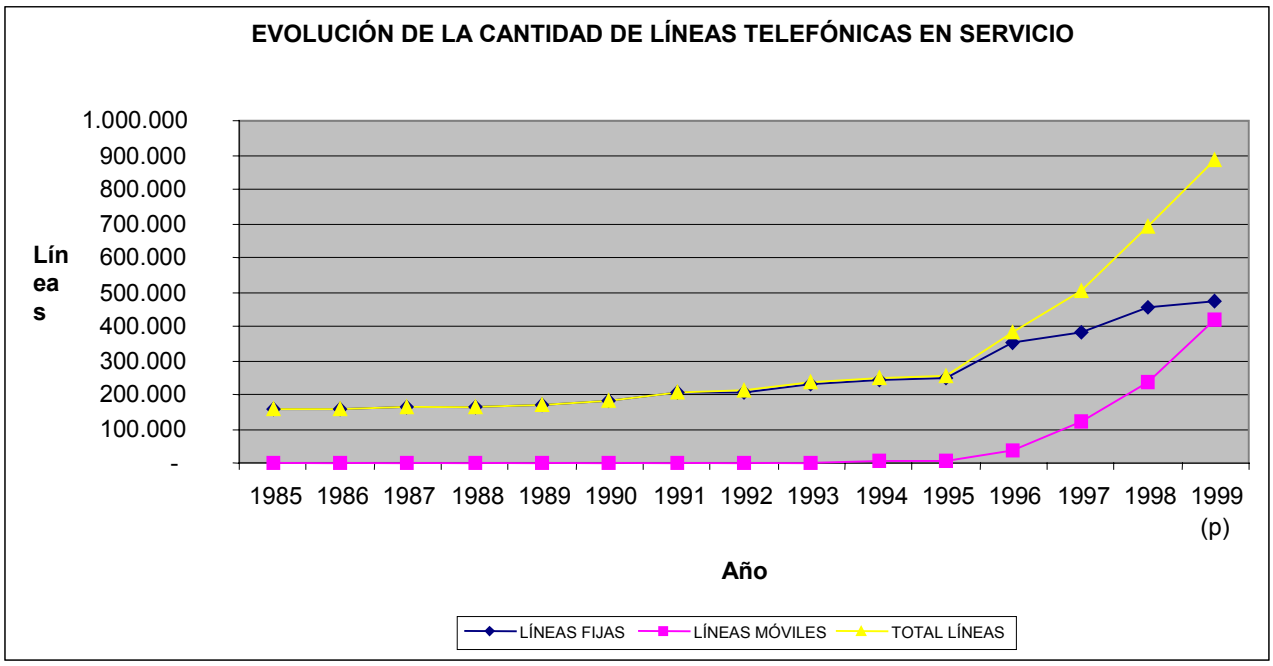
4.2 Panorama actual de la telefonía

Para tener una visión amplia de la situación de la telefonía en Bolivia, es necesario tomar en cuenta datos tecnológicos y económicos con el fin de conocer el estado del sector. Este análisis debe considerar los progresos obtenidos en el cumplimiento de los objetivos de expansión de los servicios básicos, mejoramiento de la red y por tanto de la calidad.

Con el otorgamiento de las exclusividades a los proveedores de servicios de larga distancia y local por un período de 6 años se impuso la obligatoriedad de cumplir con determinadas metas de expansión en áreas urbanas y rurales, metas de calidad y modernización de los servicios.

Los resultados de las metas de expansión se observan al analizar los indicadores de evolución de cantidad de líneas en servicio y la penetración telefónica.

La cantidad de líneas en servicio en Bolivia muestra una tendencia creciente entre 1985 y 1999, como puede apreciarse en el gráfico a continuación. En efecto, en 1999 se alcanzó una cifra superior a 850 000 líneas en servicio, entre líneas fijas y móviles.

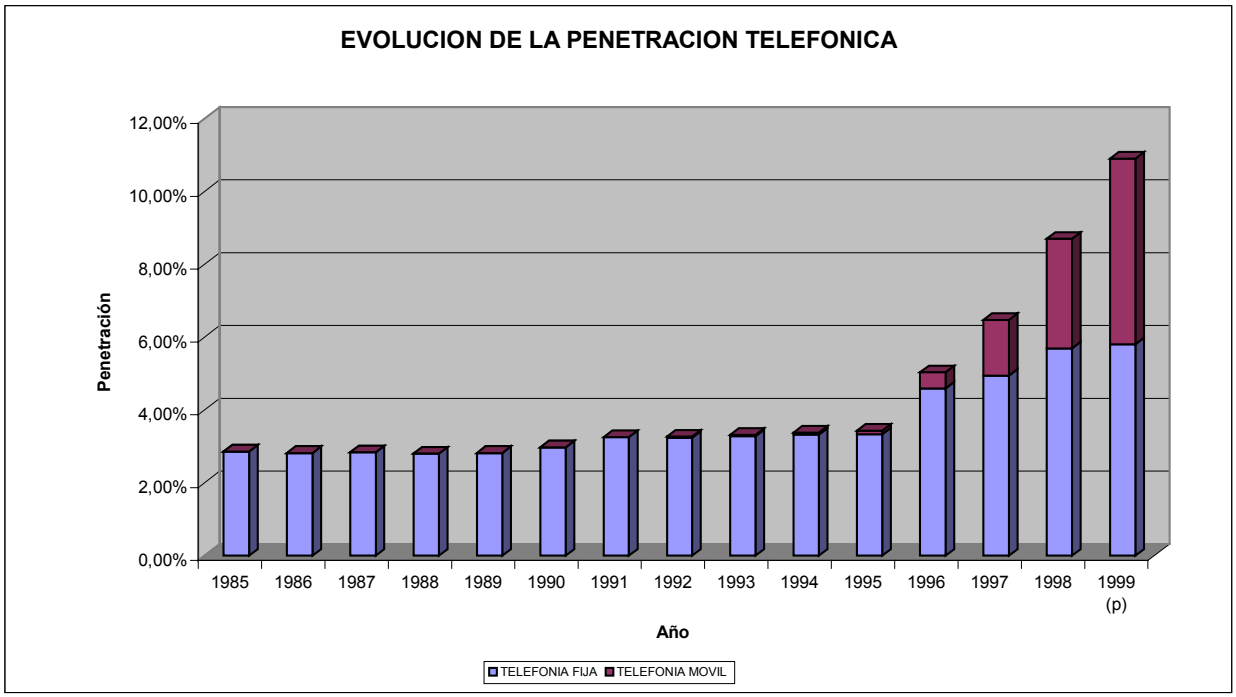


Es importante recalcar que en 1995, año de inicio de la primera reestructuración sectorial con la capitalización de ENTEL S.A. y la creación del Sistema de Regulación Sectorial, se produjo un fuerte incremento en la tasa de crecimiento de las líneas en servicio, pasando de un 4,89% anual entre 1985 y 1995, a un 37% entre 1995 y 1999.

El ingreso al mercado boliviano de la telefonía móvil en 1992 tuvo también una incidencia fundamental en la cantidad de líneas en servicio, especialmente a partir de 1996, año en el que se produjo una explosión en el desarrollo del mismo por el ingreso de un segundo operador móvil.

La composición del total de líneas en servicio a 1999 muestra que el 53% de las líneas corresponde a líneas fijas, y el restante 47% a líneas móviles. Llama la atención el crecimiento acelerado de la participación de la telefonía móvil que en 1996 representaba sólo el 9% del total.

De la relación de cantidad de líneas en servicio con la cantidad de habitantes se obtiene la penetración total que tiene el servicio telefónico en el país. En el siguiente gráfico se presenta la evolución de este indicador, y se observa que en 1999 llegó a 10,91% lo que significa que de cada cien habitantes aproximadamente 11 tienen teléfono.



Este índice muestra un importante incremento a partir de 1995, explicado fundamentalmente por el aumento de las líneas en servicio fijas y móviles. En efecto, la teledensidad total pasó de 3,43% en 1995 a 10,91% en 1999, este índice resulta mucho más significativo si se toma en cuenta que hace diez años la teledensidad era de tan sólo 2,97%.

El impacto de la telefonía móvil en la teledensidad total adquiere cada vez mayor importancia, se advierte que en 1995 la penetración telefónica móvil era de 0,10%, mientras que en 1999 alcanzó el 5,11%.

Si bien la telefonía fija presenta un importante crecimiento –ubicado en el rango de lo esperado al momento de efectuarse la transformación del sector– su impacto en la teledensidad total no es de igual magnitud, ya que sólo se registró un crecimiento de 2,5 puntos porcentuales en 3 años, pasando de 3,3% en 1995 a 5,8% en 1999, con un ritmo de crecimiento de 18% en contraposición a una tasa de crecimiento promedio del servicio móvil de 198%.

4.3 Calidad del servicio

La calidad del servicio brindado por los operadores toma en cuenta varios índices como el porcentaje máximo mensual de fallas reportadas en un año por cada cien líneas en servicio, el porcentaje mínimo mensual de fallas reparadas dentro de 24 horas de reportadas, el porcentaje mínimo semestral aceptable de llamadas completadas, porcentaje promedio máximo de llamadas con más de 3 segundos de espera para recibir tono de discar y porcentaje mínimo de llamadas que obtienen respuesta antes de 10 segundos referidas a reclamos, obtención de información de deudas o de directorios telefónicos.

Las metas de calidad varían de un operador a otro, sin embargo todas tienen la particularidad de ser exigibles gradualmente hasta el año 2000. Según los reportes presentados por los operadores de servicios básicos, se observa un elevado grado de cumplimiento de las metas establecidas.

A nivel agregado (cumplimiento reportado por ENTEL S.A. y cooperativas telefónicas) según los reportes presentados a 1998 la incidencia de fallas alcanzó un 24%, lo cual significa que de cada cien líneas, 24 presentaron una falla al año, la meta esperada para este indicador era de 44%.

En lo referente a la corrección de fallas, se tuvo que de cada cien fallas reportadas 82 fueron corregidas en un lapso de 24 horas, cifra mayor al 63% exigido en el contrato.

Respecto al grado de completicidad de las llamadas, todos los operadores de servicio local reportaron el cumplimiento de esta meta.

4.4 Modernización

SITTEL verifica el cumplimiento de la meta de modernización en función al cambio de todas las

centrales manuales y analógicas por centrales digitales.

Los contratos de concesión establecen porcentajes mínimos de digitalización de líneas por semestre. La meta de modernización fue superada en más de 20 puntos porcentuales en 1998. Se logró que un 81% de las líneas instaladas en el país por los operadores de telefonía local sean digitales en comparación con la meta esperada de 57%.

El tiempo de espera de conexión de nuevas solicitudes era para 1998, para todos los operadores, de dos meses periíodo que fue cumplido por todas las empresas. La mayoría de los operadores presentan un cumplimiento cercano al 100%.

5 Obstáculos

En general, como se puede advertir existen importantes avances en el sector de las telecomunicaciones en Bolivia tanto en lo referente a la consolidación de la institución reguladora, el establecimiento de las mejores prácticas regulatorias a través de un marco jurídico completo, provisión de los servicios de telecomunicaciones que se encuentra evolucionando paralelamente a los avances tecnológicos de esta industria en el mundo, sin embargo es necesario apuntar los obstáculos principales que afrontó y afronta el país en la consolidación de este nuevo ambiente.

El proceso más complejo en Bolivia, a tiempo de iniciar la regulación, fue la adecuación especialmente de los antiguos operadores de radiodifusión a la nueva legislación sectorial, este proceso encontró una serie de obstáculos debido al caos, discrecionalidad y escasa transparencia en la otorgación de autorizaciones para la prestación de servicios, que caracterizaba antes al sector.

Muchos de los que no lograron demostrar sus derechos desconocieron los recursos en el ámbito administrativo y activaron los recursos ante el Poder Judicial, sin respetar los pasos previstos para acudir a este Poder como última instancia. Este proceso finalmente concluyó exitosamente con actos públicos de entrega de licencias, reforzados con acciones adoptadas en la vía sancionatoria con el comiso de más de una docena de equipos de participantes ilegales en el mercado.

Otro aspecto negativo es que en los ya 4 años transcurridos desde la promulgación de la Ley de Telecomunicaciones no se realizó el rebalanceo tarifario del servicio local que tenía el objetivo de proveer un servicio con tarifas cada vez más aproximadas a costos.

Básicamente esta situación se explica por la debilidad institucional en las cooperativas que sin duda repercute en contra de los usuarios actuales y potenciales en su mercado y genera pérdidas sociales, las cooperativas telefónicas locales se mantuvieron en un tope de tarifa ponderada promedio que representa el 65% del tope de precios establecido por SITTEL.

La tarifa elevada de acceso (entre 1 200 y 1 500 dólares) a la telefonía local generó en estos años una creciente demanda insatisfecha, que no puede acceder al servicio principalmente por la barrera de entrada que no logró reducirse como se esperaba e incrementó las posibilidades de crecimiento de la telefonía móvil que vino a constituirse en un sustituto del servicio local.

Está claro que las cooperativas telefónicas deben tomar medidas urgentes antes de que concluya su período de exclusividad para tomar ventaja de las actuales condiciones monopólicas en las que prestan el servicio, y sobre todo muchas de ellas deberán adoptar importantes cambios en su administración para alcanzar mayores niveles de eficiencia interna y de rentabilidad.

6 El reto del acceso

Otro de los obstáculos en el logro de los objetivos fundamentales de la regulación, lo constituye el limitado acceso a los servicios básicos en el área rural, según los datos de 1998 la teledensidad en esta área apenas había alcanzado la cifra de 0,33%.

Si bien el ritmo de crecimiento de la teledensidad rural fue del 100% en los últimos tres años, y los esfuerzos de los operadores en el cumplimiento de las metas de expansión en el área rural, están dando frutos, que se reflejarán en las más de 1 600 poblaciones con acceso al servicio básico hasta fines del año 2000, los resultados son todavía insuficientes.

De aproximadamente 8 millones de habitantes, tan sólo el 55.83% vive en ciudades mayores a los 10 000 habitantes y, en cambio, el 19,59% lo hace en aproximadamente 9 000 poblaciones dispersas que no alcanzan a albergar ni siquiera 350 habitantes, donde un 95% de sus pobladores vive en condiciones de extrema pobreza: indigencia y marginalidad.

Entre algunos de los datos alarmantes sobre las condiciones de vida de las poblaciones rurales, se tiene que el 93,7% de las viviendas no cuenta con saneamiento básico, 93,5% no tiene energía eléctrica, 84,7% presenta rezago educativo y

83,8% de las viviendas están construidas con materiales de mala calidad.

Bolivia es un país de gran disparidad urbano-rural con niveles de desarrollo humano muy bajos y, consecuentemente, altos índices de pobreza, sobre todo en el área rural. Hoy las telecomunicaciones pueden convertirse en un instrumento capaz de lograr además de la integración del país con los sectores rurales más pobres, permitir la aplicación de programas complementarios de educación, salud, asistencia agrícola, alimentaria, con directo beneficio de dichos sectores.

La reestructuración de las sociedades actuales en función a la globalización tienen como motor principal a las telecomunicaciones, es así que para Bolivia uno de los principales retos de las telecomunicaciones será el de lograr a través del acceso, que sean cada vez más los bolivianos que integren la sociedad de la información.

6.1 Proyecto de telefonía rural

Con este objetivo en mente es que se planteó el Proyecto de Telefonía Rural boliviano que busca crear los mecanismos necesarios para implementar redes de telecomunicaciones en las poblaciones rurales más pobres del país, cuya cobertura no se encuentra comprendida en las metas impuestas a los operadores de servicios básicos de extensión de su red, circunscribiéndose por tanto a las poblaciones menores a 350 habitantes.

A través de la expansión de la infraestructura de telecomunicaciones, no sólamente se garantiza una mayor participación social y un acceso más amplio a los servicios básicos, sino también otros servicios básicos complementarios, que permitirán elevar el nivel de vida de las comunidades beneficiarias, que hasta el momento están totalmente desatendidas.

Si las poblaciones beneficiarias no están incorporadas a la vida nacional, menos lo estarán al esquema de mercado y al proceso de globalización; y dejarlas casi libradas a su propia suerte en un intento de apertura a dicho esquema que permita que operadores privados inviertan en ellas en telecomunicaciones, sería de lejos contraproducente.
Los principales objetivos del Proyecto son:

- Construir una red de telecomunicaciones que, además de brindar servicios de telefonía básica, se constituya en el medio para proporcionar servicios básicos y complementarios a las poblaciones beneficiarias.
- Generar nuevos proyectos de desarrollo en el área rural.
- Encarar estructuralmente las tareas de lucha contra la actual extrema pobreza de las poblaciones beneficiarias, elevando y dignificando su calidad de vida.

A través de este proyecto se logrará superar la situación de marginación y pobreza extrema de aproximadamente 2 millones de personas –habitantes de cerca de 9 000 poblaciones menores a 350 habitantes– mediante la implementación de proyectos que brinden servicios de telecomunicaciones a dichas poblaciones y su área de influencia para, a partir de la red instalada, proveer servicios de teleeducación, tele-salud, teleseguridad ciudadana, tele-asistencia alimentaria, teleasistencia agrícola y telecomunidad.

La cobertura de la red alcanzará directamente a 1 500 000 habitantes distribuidos en aproximadamente 5 000 localidades e, indirectamente, a 600 000 habitantes ubicados en cerca de 4 000 localidades vecinas, todas ellas menores a 350 habitantes, totalizando así cerca de 2 000 000 de personas beneficiadas.

6.2 Apertura de mercados

La próxima apertura de mercados del servicio local y de larga distancia, es otro de los desafíos centrales para SITTEL, y se presenta como el instrumento idóneo para provocar un mejor uso de los recursos existentes, elevar la calidad de los servicios ofrecidos, disminuir los precios y también aumentar la cobertura poblacional y territorial de la oferta.

Inicialmente Bolivia analiza detenidamente la probable aplicación del modelo de separación estructural, que permitirá la expansión de la infraestructura de telecomunicaciones a cargo de un operador de la red de acceso en régimen de exclusividad e incrementará la oferta de servicios de los operadores en competencia, que son aquellos que facilitan la conmutación de las comunicaciones. Por tanto el mercado local tendría dos segmentos uno con características monopólicas y otro con características competitivas.

Este modelo buscará desarrollar el segmento subdesarrollado (local y rural) y, por otro, evitar que la competencia se plasme exclusivamente en los servicios de larga distancia, frenando su futuro nivel de inversión y crecimiento.

Mr. Apollo KNIGHTS
Head of the Telecommunications Department with the Ministry of Communications and Works

COM.3

Biography

Apollo Knights is presently the Head of the Telecommunications Department with the Ministry of Communications and Works. His duties include:

- Liasing with regional and international telecommunications bodies.
- Advising on regulatory issues relating to telephones and telecommunications.
- Advising on policies relating to basic and value address telecommunication services and on issues such as the internet GMPCs and multimedia services.
- Management of the Country's Radio Spectrum.
- Coordination with neighboring countries to eliminate frequency interference.
- Coordination with the National Disaster sub-committee for emergency communications.
- Deals with all matters relating to radio and television broadcasting and licenses as outlined in the Telecommunication Act.
- Management and monitoring of Government telephones.
- Member of the Project Implementation Committee for the Organization of the Eastern Caribbean States (OECS) Telecom Reform Project.

COM.4

Room H

Thursday, 13 April 2000	10:00 – 12:00

COM.4	IT Revolution – Stimulating the private provision of networks & services

Chairperson:

Mr. Francisco GÓMEZ ALAMILLO,
Secretary General,
AHCIET (Spain)

Moderator:

Mr. Carlos BRAGA,
Director,
InfoDev (The World Bank)

Keynote speaker:

H.E. Mr. Kálmán KATONA,
Minister of Transport, Communication and Water Management (Hungary, Rep. of)

Panelists:

Mr. José Fernando Xavier FARACO,
Presidente,
FIESC (Brazil)

Mr. Patrick NICOLET,
Partner,
Ernst & Young Consulting S.A. (Switzerland)

Mr. David TOWNSEND,
President,
David N. Townsend Associates (DNTA) (USA)

COM.4

Room H

Thursday, 13 April 2000	10:00 – 12:00

COM.4	IT Revolution – Stimulating the private provision of networks & services

This session will examine the potential of public/private partnerships in providing tele-communication value-added services.

Potential areas of partnership and collaboration will be identified (e.g. telecentre franchizing, private development of public service contents for Internet siting, projects for delivering services to less accessible and rural areas).

The sharing of responsibilities among governments, private firms and international funding agencies will be discussed. The social impact of various programmes as well as the role of telecommunication companies and regulatory agencies will be addressed.

Proposals for specific action involving donor/government/private enterprise partnerships will be examined.

Mr. Francisco GÓMEZ - ALAMILLO
Secretary-General
AHCIET

COM.4

Biography

Francisco was born in Toledo (Spain), where he graduated from High School. At the Complutense University of Madrid, he received his Ph. D. in Physics Science in 1970, after a period of studies at the Faculty of Science in Orsay (France). He joined the Research and Studies Center of Telefónica Spain in 1970. During the 10 years he remained in this Center he was responsible for several projects related to the introduction of new technologies in telecommunications network. He also represented Telefónica Spain in several technical committees at ITU and was President of the Technologies and Costs Evolution Committee of CEPT (European Conference on Post and Telecommunications). In 1980, he was named responsible of the AHCIET project for the creation of a Hispanic American Association on Research Centers and Telecommunications Companies. After its legal constitution in 1982, he was designated Secretary-General, position he maintains to date.

He also has a degree in Law, Business Administration, and Computer Science. He is the author of several articles and papers on Telecommunications, and has made more than 50 presentations in important international forums.

Dr. CARLOS ALBERTO PRIMO BRAGA
Program Manager
*info*Dev

COM.4

Biography

Carlos A. Primo Braga is the Program Manager of *info*Dev (the Information for Development Program), a multi-donor grant facility administered by the Global Information and Communication Technologies Department of the World Bank. In this capacity, he is responsible for a portfolio of more than 100 innovative projects funded by *info*Dev grants all over the world. In the 1995-97 period, he worked as the Principal Economist of the Telecommunications and Informatics Division, Industry and Energy Department, and before that (1991-95) in the International Trade Division, International Economics Department, The World Bank. He has also acted as the Thematic Group Leader of TechNet (a World Bank network of professionals working with science and technology for development) for the period 1995-99 and he was in charge of the Y2K outreach activities of the World Bank over the 1998-99 period. Before joining the World Bank in 1991, Mr. Primo Braga was Assistant Professor of Economics at the University of Sao Paulo and Senior Researcher at the Fundacao Instituto de Pesquisas Economicas (FIPE), Sao Paulo, Brazil. Over the 1988-98 period, he was also a Visiting Professor at the Paul Nitze School of Advanced International Studies, The Johns Hopkins University, Washington, D.C. He is also currently a member of the Scientific Advisory Board of the TU Delft Inter-Faculty Research Center, The Netherlands and of the Steering Committee of the International Y2K Cooperation Center. He is also a Visiting Lecturer with the World Trade Institute (Joint Center of the Universities of Berne, Neuchatel and Fribourg), Switzerland.

Carlos A. Primo Braga was born March 13, 1954 in Resende, Rio de Janeiro, Brazil. He received his Mechanical Engineer degree from the Instituto Tecnologico de Aeronautica (ITA), in 1976. He also received a master's degree in Economics from the University of Sao Paulo in 1980, a M.Sc. (1982), and a Ph.D. (1984) in Economics from the University of Illinois at Urbana-Champaign.

In the 1984-91 period, he served as an economic consultant to many private companies, multilateral agencies, and governmental institutions in Brazil and abroad - including the World Bank and the Organization of American States. During 1987-88, he was joint coordinator of the Brazilian team working on a Rockefeller Foundation project on the Multilateral Trade Negotiations and the Developing Countries. In the 1988-89 academic year, he was a Fulbright Scholar at the Johns Hopkins School of Advanced International Studies in Washington, D.C. He has served as a member of the editorial board of several academic publications – such as Revista de Estudos Economicos, Informacoes FIPE, Revista Brasileira de Comercio Exterior, and Hemisfile, and as a member of the board of directors of the Fernand Braudel Institute of World Economics, Sao Paulo, Brazil. He has also testified before different committees of the U.S. Congress on U.S.-Latin American economic relations and his "op-ed" essays have appeared in *Folha de Sao Paulo*, *O Globo*, *O Estado de Sao Paulo*, among other newspapers.

His main research interests are: international economics (multilateral institutions, regional integration, foreign direct investment, trade and development); economics of science and technology; intellectual property rights; industry studies (telecommunications, steel, frozen concentrated orange juice); and economics of the services sector. He prepared in cooperation with UNCTAD staff *Liberalizing International Transactions in Services: A Handbook* (New York, United Nations, 1994) and he was responsible for the chapter "More to Trade: the Internationalization of Services" in World Bank, *Global Economic Prospects and the Developing Countries – 1995*.

Primo Braga's main publications include: "Developing Countries and Accounting Rates Reform – A Technological and Regulatory El Nino?" *Viewpoint*, No. 173 (January 1999), (co-authors: E. Forestier, P. Stern); "Inclusion or Exclusion?" *The UNESCO Courier* (December 1998); "Reforming Intellectual Property Rights Regimes: Challenges for Developing Countries," *Journal of International Economic Law* (1998): 537-54, (co-author: C. Fink); "Telecommunications in the Andean Countries" (co-authors V. Ziegler and Li-Gang Liu) in M.R. Mendoza et al., eds., *The Andean Community and the United States* (1998); "Telecommunications in Latin America and the Caribbean: The Role of Foreign Capital," *The Quarterly Review of Economics and Finance* 38 (Fall 1998), (co-author: V. Ziegler), "Protection and Trade in Services: A Survey" *Open Economies Review* 3 (1997), (co-author: B. Hoekman); "Liberalizing Telecommunications and the Role of the World Trade Organization," *The Information Revolution and the Future of Telecommunications*, The World Bank (June 1997), "The Private Sector and the Internet," (co-author: C. Fink) *The Information Revolution and the Future of Telecommunications*, The World Bank (June 1997); "The Economic Justifications for the Grant of Intellectual Property Rights: Patterns of Convergence and Conflict" (co-author: C. Fink) in F. Abbott and D. Gerber, eds., *Public Policy and Global Technological Integration*. London, Kluwer Law International, 1997. "Latin America and the Caribbean in the World Economy," (co-authors: S. Rajapatirana and J. Nogues) in S. Burki et al., eds*., Development in Latin America and the Caribbean: The Challenges of Reform*, Proceeding of a Conference Held in Rio de Janeiro. Washington, D.C., The World Bank, 1997; "Trade in Services, the GATS and Asia" (co-author B. 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"The Economics of Intellectual Property Rights and the GATT: A View from the South." *Vanderbilt Journal of Transnational Law*, 22 (2/1989): 243-64; *Brasil 1980: Os Desafios da Crise Economica* (co-editors: C.A. Rocca, M.C. Cacciamali, and M.C. de Castro). Sao Paulo, IPE/USP, 1988; "Brazilian Public Sector Disequilibrium," (co-authors J.H. Welch and P.T.A. Andre) *World Development* 15 (August 1988): 1045-53.

Mr. José Fernando Xavier FARACO
Presidente, FIESC (Brazil)

COM.4

Biography

Activities

President of the Federation of Industries of Santa Catarina – FIESC.

President of the Administrative Board of SC GAS.

Elected 1st Vice-President of FIESC, with a mandate through 1999.

President (on leave) of the Board of Directors of SEBRAE/SC.

Member of the following organizations:

Thematic Council for Industrial Policy and Technology Development of CNI (National Industrial Confederation)

Board of Directors of SESI [Industrial Social Service] and SENAI/DN (National Service for Industrial Training)

Curators of the CERTI Foundation [Foundation Center for Innovative Technology References]

Business Center for Advanced Technology – CELTA.

Counsel of Promoting Entities of the Greater Florianópolis Technology Center – CONTEC, of FUNCITEC

CONCIET, the Scientific and Technology Policy Board of Santa Catarina, of the State Secretariat for Economic Development and Integration to Mercosur

State Environmental Council – CONSEMA

Administrative Board of Centrais Elétricas de Santa Catarina S.A. – CELESC.

Board of TELESC of Greater Florianópolis.

Other activities

Founding President of the Business Group in advanced technologies, which includes the following companies:

1 Dígitro Tecnologia Ltda.

2 Gyron Tecnologia em Servo-Sistema Ltda.

3 Teclan Engenharia de Software Ltda.

4 Netvox Serviços Avançados em Telemática Ltda.

5 Flug Telemática e Automação Ltda.

Telecommunications Engineer at PRODASC

Founder and first President of ACATE; [Catarina Telematics and Electronics Association]

Founder and first and current President of SIESC; [Union of Computer Companies]

Place and Year of Birth:

Florianópolis, Santa Catarina, Brazil, 1954.

Civil Status

Married to Dalquíria Faraco, with whom he has two children: José Fernando and Felipe Faraco.

Mr. Patrick NICOLET
Partner, Ernst & Young Consulting S.A. (Switzerland)

COM.4

Biography

Partner and Leader of the Technology, Communications and Entertainment service line in Germany – Switzerland for Ernst and Young Consulting based in Lausanne, Switzerland

Patrick Nicolet, born in 1958, graduated in 1983 with a Masters Degree in Law from the University of Lausanne (Switzerland).

He began his career as a legal advisor in the Swiss venture capital firm Granit S.A. in Lausanne (Switzerland). By 1994, he was Director of the Company Y-Parc S.A., a private-public limited company, which specializes in technology transfer, business start-ups, management of businesses and innovation centers, based in Yverdon (Switzerland). Following this, he worked as an independent Consultant for Swiss, French and Italian companies. His main focus was Business development. He advised companies in the creation of strategic alliances and he also supported many international Joint Ventures, mergers and turn-arounds.

Patrick Nicolet has been working for Ernst & Young Consulting in Switzerland since 1997. At the beginning of 1999, Patrick Nicolet took over the responsibility of the Technology, Communications and Entertainment group for Germany/Switzerland. His main expertise is in strategic advisory services, performance management, post merger integration and corporate recoveries.

In 1993 he received the distinction of “Global Leader for Tomorrow” from the World Economic Forum. He was an economic expert for the FER Committee of the Swiss Science Council and also for the Swiss Federal Commission for Technology and Innovation.

Mr. David N. TOWNSEND
President
David N. Townsend & Associates (DNTA)

COM.4

Biography

David N. Townsend is an international consultant in telecommunications economics, policy, and regulation, and President of David N. Townsend & Associates (DNTA). Mr. Townsend's professional experience has included the following activities:

- Management of telecommunications regulatory reform, tariff policy, and sector reorganization support projects and studies in numerous countries, including Mexico, Hungary, the Philippines, Thailand, China, Costa Rica, Colombia, Bolivia, Bahamas, South Africa, Côte d'Ivoire, Tanzania, Turkmenistan, Finland, Canada, and the United Kingdom.
- Analysis of technological and economic issues relating to the development of new and competitive telecommunications markets and services, including, the Internet, Electronic Commerce, Multipurpose Community Telecenters, Cable Television, and Distance Learning.
- Development of telecommunications tariff, demand, and cost comparison and simulation models for international, national, regional, and private telecommunications networks.

In the U.S. and Canada, Mr. Townsend has participated in the shaping of national regulatory and industry policies as an expert on issues of telephone company tariffs, cost study methodologies, investment policies, and regulatory frameworks. He has a Master of Public Policy from the John F. Kennedy School of Government, Harvard University, and an A.B. in Asian Studies from Dartmouth College.

COM.5

Room H

Thursday, 13 April 2000	13:30 – 17:00

15:00 – 15:30 coffee break

COM.5	IT Revolution – Fostering and Ensuring Citizens' Rights

Chairperson:

Dr. Patrick NETTLES,
President and Chief Executive Officer,
CIENA Corporation (USA)

Keynote speakers:

H.E. Mr. Gregory BOWEN,
Minister of Communications
(Grenada)

Mr. Ken WASCH,
President, Software and Information Industry Association (SIIA) (USA)

Panelists:

Ms. Tiahoga RUGE,
Director,
North American Center for Environmental Information & Communication (Mexico)

Mr. Steve CISLER,
Consultant, Tachyon, Inc.,
Member of the Internet Society
and Member of the Board, Association for Community Networking

Mr. Alain SERVANTIE,
Head, International Regulatory Aspect,
European Commission (Belgium)

Mr. Alejandro ALFONZO,
Regional Representative,
Americas Region (UNESCO)

COM.5

Room H

Thursday, 13 April 2000	13:30 – 17:00

15:00 – 15:30 coffee break

COM.5	IT Revolution – Fostering and Ensuring Citizens' Rights

One of the main challenges of the information age is to ensure that all individuals, communities and nations gain access to, and are able to use effectively, the information and knowledge they require in order to improve their lives. Such access and the related training and capacity-building are a precondition of advancing citizens' rights through IT. In a way, IT provides a means to promote a democratic society and good governance. Democratic participation is the key element in fostering good governance. It will require balancing and addressing the different interests of subgroups in order to safeguard the interests of a community while guaranteeing basic human and individual freedoms. Good governance will ensure that political, social and economic priorities are based on broad consensus and that the voices of people on the margins of society are heard in decision making.

This will give rise to dynamic, digital networks of people, institutions and organizations in order to share experience and knowledge. Awareness and concrete citizen action in favour of equity, fairness, social justice, empowerment and informed decision making at the local, national, regional and global levels are bound to follow. IT offers novel modalities for such empowerment. One of the most powerful attributes of IT is the ability to reach those "on the margins" and to enable them to partake in economic and social discourse and progress. By the same token, access to and the preservation of traditional knowledge are urgent tasks. Effective, transparent and accountable governance mechanisms utilizing IT are particularly critical to fostering the observance and enjoyment of human and civil rights. On the other hand, the new technologies might also impinge on the freedom of information and the diversity of views and experience as a result of media concentration or control and censorship.

By providing legitimacy for government and encouraging people's participation in decision making, IT-based democratic processes may increase the effectiveness of state policies and development strategies. With the help of IT, democratic institutions may be better able to respond to calls for accountability, transparency and responsiveness. IT may also give rise to a new type of countervailing power, such as globally active NGOs and networks, drawing on the Internet's capability to instantly broadcast information worldwide and facilitate concerted lobbying campaigns.

Mr. Kenneth WASCH
President
Software & Information Industry Association (SIIA)

COM.5

Biography

Kenneth Wasch is the president of the Software & Information Industry Association (SIIA), the leading trade association for the software code and information content industry. The Washington, D.C. based organization represents 1,400 leading high-tech companies that develop and market software and electronic content for the global business, education, consumer, Internet and entertainment markets.

Wasch's involvement in SIIA is based on personal and professional interests. His long term interest in computers and software, coupled with the industry's need for a central trade association, led him, with an initial group of 25 software firms, to establish the Software Publishers Association (SPA) in 1984. Since then, Wasch led the association from its infancy to its merger, in January 1999, with the Information Industry Association, leading to the formation of SIIA.

Prior to founding SPA, Wasch spent eight years as a staff attorney for the U.S. Department of Energy, where he was involved with price regulation. He received his undergraduate degree in Economics and International Relations from LeHigh University, and his law degree from SUNY Buffalo, New York.

Wasch was recently awarded the Computer Law Leadership Award for significant contributions to the international legal and regulatory systems relating to the computer industry. A popular speaker, Wasch appears regularly at Japanese, American and European gatherings of software executives. He speaks on a broad range of topics covering issues such as intellectual property, software piracy, trends in the high-tech industry, and competition. He is fluent in Spanish.

He and his wife Lesley, an intellectual property attorney, live in Annapolis, MD, and Washington, D.C.

Ms. Tiahoga RUGE SCHEFFER
President & Director General
CICEANA

COM.5

Curriculum Vitae

1 Education

B.S. in Biology – Universidad Nacional Autonoma de Mexico, Mexico.

B.A. in Social Anthropology – University of Houston, Texas, USA.

M.S. in Biology – University of Houston, Texas, USA.

M.A. in Film Direction. Cinecitta Rome, Italy – Assistant to Federico Fellini.

Doctoral Studies in Social Anthropology – Universidad Nacional Autónoma de México.

2 Languages

Fluent: Spanish, English, German (100% spoken and written).

Intermediate: French, Italian, Dutch (80% spoken, 40% written).

3 Work experience

- President and Director of the North American Center for Environmental Information and Communication (CICEANA) (Since 1995 to this date) **CICEANA** is a trinational non-profit organization created to improve the environment using information, communication and environmental education. It is located in Mexico, but works in coordination with North America and Latin America. **CICEANA**'s main objective is to inform the public on environmental issues and enhance education to create a stronger public awareness in society, that will lead to **Sustainable Development**. **CICEANA** works as a link between the private sector, educational institutions, government, mass media, non governmental organizations and individuals who are committed to the improvement of the environment. CICEANA's strategy is to use the most advanced information technology and apply it to environmental communication in order to create an environmental culture.
- Director and Producer of several national and international television programs and series on environmental issues. Among them, a twelve part television series on the "Earth Summit", which was broadcasted to all Spanish speaking countries through "Cadena de las Americas", TELEVISA – 5 Part TV Series about the Biosphere 2 project.
- President of Friends of the Biosphere (1991-1998).
- Director of the Nationwide Program: "Culture, Communications and Environment", Mexican Ministry of Culture – CNCA (1988-1991).

- Science and Culture Counselor, Embassy of Mexico in India (1984-1988).
- Lecturer on environment and anthropology, UNAM (1981-1984).
- Assistant to Federico Fellini in Cinecitta, Rome, Italy (1978-1980).

4 Distinctions

Global 500 Roll of Honor, 1991. Environmental price given by the United Nations Environment Program.

5 Memberships and board member

1 North American Association of Environmental Educators, NAAEE – Board Member.

2 WE TV (Canada) – Board Member.

3 Commission for Environmental Cooperation, CEC.

4 GreenCom (USA) – Technical Advisory Board Member.

Latin America

- Member of the Latin American Communication Network for the Environment TVE-UNEP.
- Counselor for the Global Forum for Latin American and the Caribbean.
- Member of the Mexican Network of Environmental Educators.

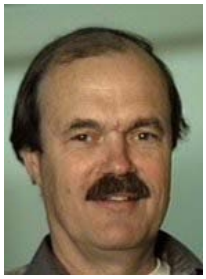
United Kingdom

- Television Trust for the Environment, TVE (United Kingdom) – Representation for Mexico.
- Green Futures (United Kingdom) – Editorial Board Member.
- Forum for the Future.
- Twenty First Century Trust – Fellow.

6 International participation

(Most important events only)

1986	Coordinator of the 6 Nation Summit for Peace and Disarmament.
1990	Coordinator of the cultural activities of World Environment Day, celebrated internationally in Mexico.
1992	Participant at the Forum for Environment and Communication at the Earth Summit – Rio de Janeiro, Brasil.
1992-1999	Participant in numerous national and international conferences and symposiums worldwide.
1998-1999	Participant at the Annual Symposium of the InfoDev project of the World Bank. Presently considered as one of the most important think tanks about the role of Information technologies for development.



Mr. Steve CISLER

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A Beachcomber's Guide to Citizenship in the Information Age

Abstract: This paper deals with new tools for use by citizens, new ways of connecting to the Internet, and includes profiles of people who are active in this area, as well as organizations with relevant programs in the area of citizen empowerment.

Computers are mostly used against people instead of for people; used to control people instead of to free them. Time to change all that– we need a People's Computer Company – newsletter number 1 of People's Computer Company, October 1972.

1 Background

It has been twenty-seven years since People's Computer Company began to engage citizens in the San Francisco Bay Area to learn about computers and to use them in ways most people had never contemplated. This pre-dated the first personal computers. Bob Albrecht opened a walk-in computer center in Menlo Park, California, that operated as a non-profit and allowed people to learn about computers. This was about the same time that Lee Felsenstein and Efrem Lipkin started Community Memory in Berkeley, California, where timeshare terminals were placed in public places (the Whole Earth Access store, the public library, a cultural center), and residents entered poetry, rants, want-ads, and love letters in a chaotic database. It proved to be an inspiration to the community network movement of the next decade. The Free-Nets started in 1985 in Cleveland, Ohio, after the users of Tom Grundner's St. Silicon's Hospital and Information Dispensary outgrew the Apple II BBS he had crafted. Several hundred of these community networks were started (and many others never got past the planning stages), and hundreds of community based groups opened telecenters or community technology centers for classes, camaraderie, and computing access.

This paper is an attempt to look at the developments in public interest computing in recent years. Are the models of the past decades going to be effective in the next century? With all the collaboration tools and connectivity, why are these activities not more unified? There are numerous organizations all trying to speak for some sector that advocates access in schools, rural areas, inner cities, libraries, local communities, and for youth groups, American Indians, registered voters, and even prisoners. Many of these look for support and funding from the same pool of government, corporate, and foundation money. Their mission statements overlap, and there is less cooperation that I would hope for, given the focus of their activities. Even with e-mail, telephone, and fax, they do not always stay in contact. The activities include low or no-cost access centers, low power radio broadcasting, electronic mapping of community resources, recycling old computers for use by the poor, technology training of all types, the use of the tools to improve organizational efficiency, political advocacy, and sometimes to save time! Most of the proponents believe or know

from experience that these applications and tools will help citizens engage in local, regional, national or international activities more effectively. However, there are those who think it is detrimental, not worth the effort, or just too costly. I will also include some projects that mirror some of the violent political conflicts going on around the world and show how these same tools are used as weapons or propaganda instruments in an infowar where citizen can take part.

I have divided up the sections into four areas: tools (both hardware and software); leaders; projects; and articles and books for further reading. My opinions have been shaped by my experience with public access sites and community networks, by the e-mail exchanges with believers and skeptics, some telephone interviews, by visits to different sites, and by a great deal of reading both online and in traditional books and magazines. One of the most significant has been Manuel Castells *The Information Age: Economy, Society, and Culture*, a trilogy which I read as they were published from 1996 to 1998.

Castells' *End of Millennium* is the third volume. He says the two macro-trends that shape this age include the globalization of economy, technology, and communication and "the parallel affirmation of identity as the source of meaning.[1] " One of the concepts he introduces is the "space of flows" which is the sum of all the transactions and interchanges by computer but also the interchange of people through transport hubs, of ideas through television, satellite, and print, and of financial information through banks and stock exchanges. Many, even in U.S. society, are excluded from the network society, but billions more are not even worth exploiting, according to Castells. Castells wrote a long rejoinder to three reviews of his trilogy that appeared in *The New Political Economy* for November 1998. In it he states: *Grassrooting the space of flows is perhaps the most significant process under way and, with it,the net will become a contested terrain, rather than the tool of domination and exclusion.* In contesting this terrain, we affirm the importance of public space.

The common theme I see in the way these tools are used, the way the leaders act, is the hope that successful projects will buffer some of the negative effects of globalization by including more people and more groups in the benefits we assume will come from all of this networking. The assumptions about the efficacy of all this activity show up in schemes and plans from NetDay in 1996 down to a neighborhood computer literacy classes on 1999. Here are just a few that are reminders of the hopes and predictions for electricity, the telephone, radio, and television:

- Learning to use computers will prepare the youth for the 21st century workforce.
- There is a digital divide that needs to be closed.
- When computers are cheap enough, everyone will want one.
- Everyone needs to use computers or they will be marginalized.
- Organizations will be better organized if they use networks to communicate.
- If everyone has e-mail, their connections to others, especially distant friends and family, will be improved.
- Rapid acquisition of mail and information is an improvement over slower methods.
- If I put information online about my (self, organization, town) it will attract attention and be rewarded with more job offers, members, and tourists. I will be a publisher.

All of those involved believe that is is inevitable but also desirable to participate in the network society forming around us and around certain classes elsewhere in the world. This paper will describe new opportunities and challenges for the citizen to become engaged in activities, causes, and projects outside their personal lives and how adaption of existing technologies are affecting the interactions and projects. As people become involved, it affects their self-image, and some of us believe that using the network in support of a cause or project will strengthen their personal identity-and help the cause, whether it is related to gender, ethnicity, religion, sports-teams, computer operating systems, political party, a neighborhood, city or country of residence, tribe, or some other belief system such as deep ecology, end-of-times millennialism, or even some antagonism toward some other group or movement. In simple terms, these tools will help people connect to other people, and augment both our strengths and our shortcomings.

Commercial advertising succeeds is by linking important elements of our personal or group identity to the products being sold, and this is becoming more evident in the online environment. Commercial sites are home to many expressions of personal identity. In *Mao II*, the novelist Don

[1] Castells, Manual. End of Millennium. p. 311.

Delillo writes of "systems of isolated cravings" that are supported by "the technology of consumer fulfillment." He had no premonition of eBay. The business world and the venture capital firms on Sand Hill to the north of my town are interested in e-commerce, not e-democracy. Many of the investments made by Silicon Valley venture capitalists in 1998 and 1999 related not to hardware or personal productivity applications but to electronic commerce because of the anticipated growth in the ability to sell to individuals rather than broad demographic groups so favored by sponsors of mainstream print and electronic media. The extraordinary online sales figures for Christmas 1998 helped fuel the wild speculation in Internet stocks in the early part of 1999. High speed services such as @home may lower their subscription rates because advertisers are discovering that the consumer responds to multimedia ads more readily than the annoying banner ads we would rather avoid. Better customer response to ads may further universal service goals. The money being spent and the attention being paid to Americans as consumers rather than Americans as citizens donors a whole range of opportunities being supported by few others to harness the technology, engage innovative activists with a technical bent, and even give some alternatives to those depressed Homenet users who are looking for a greater return for time spent on the Internet.

Note that I am even using a financial metaphor (ROI-return on investment) for talking about the benefits of people using new media and networking technology for civic involvement, for the augmentation of social capital (another term with ties to economics as much as sociology), a term that originated early in this century but took on a new life outside the field of sociology because of Robert Putnam's famous paper "Bowling Alone."

In the summer of 1997, after corresponding with Putnam I went to visit him, shortly after a conference on small communities and a road trip through Appalachia to visit public computing centers and anti-technology isolationists. Putnam had become more interested in the way new media and networks could help grow social capital. I had become somewhat less convinced it had as strong a role as other activities, more traditional ones that emphasized social skills.

Shortly thereafter, Putnam and colleagues formed the Saguaro Seminar <www.ksg.harvard.edu/saguaro/meetings.html> at Harvard and I stayed in contact, actually urging them not to rely too heavily on deliberations about the role of technology. Putnam felt the golden age of national organizations was about a century ago, and I reminded him that they probably did not spend much time thinking about the telephone or even electricity.

2 Tools-Hardware

In *Wired* January 1999, Howard Rheingold visited the Pennsylvania Amish to talk about cell phones and being techno-selective (choosing some technologies and rejecting others). His final question is this: "If we decided that community came first, how would we use our tools differently?" None of the PCs, PDAs, game machines, digital cameras, CD-ROM recording devices, wireless network devices or new satellites were designed with community in mind, but they have had strong effects on communities. This section discusses various technologies, and how they have been used to engage the citizen to augment her ability to get information and to collaborate. The assumed effect is democratization: to get machines and network access into more homes and schools and non-profits because of lower prices, incremental changes in technology, and the huge number of used machines floating around the system looking for a home.

Companies have not been able to forecast very accurately how their products will be used. Three years ago I thought the advent of add-on telecommunications modules for Sega, Sony PlayStation, and Nintendo would have opened up Internet access for whole new populations (mainly youth). This did not happen; they just grew in popularity as pure game machines, and Apple whose motto used to be "Changing the world, one person at a time" is basing much of its future survival on being a great game machine. So I hesitate to forecast new ways these machines will be used, just that they are here at low prices and in great numbers.

Computer Appliances have been touted by Apple, HP, and Xerox, but until 1999, I had only seen an Internet phone from France which was marketed to non-PC owners. An appliance is usually at a price point that whole new categories of buyers will enter the market. This can happen with a communications device and radically change the number of people who have access to the Net. Recently a new service was offered that lowers the entry costs for people needing e-mail at low cost.
PocketScience, Inc <www.pocketmail.com> offers a service and small hand held units made by Sharp and JVC for about $100 plus $9.95 per month for unlimited e-mail by an 800 number.

The 9 oz. device has an acoustic coupler that works with most phones worldwide. It can also be used to send faxes, compose e-mail, and of course receive it. The Open Society Institute is testing this to see if it is worthwhile setting up networks in other countries where the cost of computing is very high. A text-based web option is available, but e-mail is the lure. If e-mail for all is a goal, this lowers the cost of achieving it.

Low cost desktop units have changed the way people think about upgrades, maintenance, and the use of recycled computers. Desktop personal computers are now commodities. In January 1999, $559 buys the following:

Full Multimedia System including 15 inch Monitor. Cryix PR233 MMX, 32 Meg. of 10N SDRAM, 3.2G HD, 32X CDRom, 56K fax/modem, 1.44 Meg. Floppy drive, 16 bit sound, 14 Watt Speakers, Serial Mouse, 104 key Keyboard, Minitower case, 2/4 Meg Video Card, CTX 15 inch .28 dot pitch Monitor, 1 Year Warranty on Parts and Labor. <http://www.pc4cheap.com/>.

This not only means that more groups and individuals *may* buy more computers, it means that the ease of replacement will fill channels with more used ones. Many non-profits traffic in recycled computers. There has been no analysis of the costs and returns for recycled computer projects. PrarieNet in Champaign, Illinois, was awarded a Department of Commerce TIIAP grant for an ambitious recycling project involving graduate students, teenagers, local businesses, and the University of Illinois. The Kellogg Foundation provided matching funding totaling over $1.3 million to redistribute what one teenager called "raggety old 286's" when many were well aware of the latest models from lab work at their high school.

At some point the economic reasons for recycling old PCs will not make sense. That point may have been reached when you calculate the cost of software, maintenance, and the decreasing cost of exceptionally powerful clones. What has not been calculated is the value of the benefits that accrue when groups in town get together for *any* kind of cooperative project. For such a costly project, social capital *must* be generated, but how much? In any case, the sheer numbers of used and cheap new computers may allow many people to afford to own one.

CD-Write devices under $300 and low cost blank media (less than $1) are examples of lower equipment costs facilitating the distribution of libraries and documents and other archives from individuals or organizations with limited funding. These are matched by falling costs of printers, digital cameras, massive hard drives, and add-on cards. However, the prices seem to be falling faster than many community members or groups can effectively utilize all of the features.

Plumbing hardware is usually hidden or only noticed when it does not work. This includes the phones, modems, routers, and offerings such as wireless radio networks and new satellite services which theoretically can extend the reach of networks to include more citizens. Like the cheap PCs and the used ones they replace, it broadens the infrastructure.

I am working with a satellite company named Tachyon <www.tachyon.net> which provides high speed access via improved software, lower cost radios and dishes, and an innovative economic model that allows different qualities of service. The pricing in some places like Africa and Latin America will be disruptively low and can open up the networks to classes of users who either had no access or could not afford more than a few hours a month. The spread of these network connections relies on a certain number of businesses paying the full amount for a sort of diamond lane access, with schools and non-profits paying much less. Other organizations such as VITA, WorldSpace, and various VSAT enterprises also have their plans to extend the grid via satellite services.

Radio includes three different technologies, all of which have their devotees. In the case of data connections, point to point and point to multipoint networks are attractive in rural areas of the United States, for linking buildings on a campus or in a local area with good line of sight between the buildings. The most devoted proponent of this is Dave Hughes (wireless.oldcolo.com) whose evangelism for spread spectrum radio technology has raised expectations that it will be a "free" service with no need of the telephone companies. Hughes ran an NSF test bed in southern Colorado in the San Luis Valley using all kinds of radios and antennas. By his evaluation it was a big success, but that the school principals decided after the test to accept state money and buy wire T1 lines from U.S. West, Hughes' main nemesis! This technology has many small companies, some with no reputation, others making promises that can only be met by deploying equipment that is not exactly legal under current FCC guidelines. There is no central consumer affairs for this technology, no neutral parties, but there are consultants who are honest in their appraisal of the technologies they

have tried. The average citizen or school or non-profit would have a hard time making a purchase decision, even with all the information on the Internet. I happen to be using spread spectrum from my house to a mountain site 25 km away. This is relayed to a consumer cable IP network 6 km from there, and it has been moderately reliable and quite speedy when it does work. In general, though, wireless networking remains an arcane art.

Community Radio is a movement that I would encourage the foundation to track. <http://www.freeradio.org/> is the nerve center for Stephen Dunifer's Berkeley Free Radio movement. Besides audio and text archives, *Seizing the Airwaves* can be ordered as well as the full transmitting equipment for setting up your own radio stations at a cost of $1000 to $2000. Dunifer's station was shut down in 1998, after the court ruled with the FCC against BFR, but Chairman Kennard of the FCC has pushed for a radical change in the the availability of low power FM stations starting in 2000.

From my conversations with an employee at BFR, there is a market for these units outside the U.S. He claims most of the new stations in Haiti are using their gear. Robert Horvitz, a former employee of the Open Society Institute used a pirate radio manual translated into various eastern European languages in order to set up stations in former Communist countries in the early 1990's. Again, like the spread of the data network via satellite and spread spectrum, small community radio stations offer new possibilities for local conversations, for alternative programs, and for extending the reach of the wired network.

HF Radio is used for long distance communications, and it is popular (but not cheap) in Africa among NGOs such as the International Federation of the Red Cross, UN Department of Humanitarian Affairs, and Worldcom, a Dutch outfit. I'll say more about this in another section of the study.

3 Software Tools and Systems

Software is so adaptable - moreso than the hardware - that people are able to experiment and adapt it to the projects that engage them. I look at the overarching importance of the database, all the types of free software that are being used to share and to communicate, to understand and to stay connected with other causes and supporters and sources of information.

The Database is at the heart of many of the tools used on computers. Lev Manovich, a UCSD professor, has written that the database is the symbolic form of the computer age[2]. In fact, many of the ways a citizen becomes engaged are functions of some kind of database. These include archives of e-mail on our own machines or in remote archives; collections of names and descriptions that constitute membership in an interest group, club, movement, or professional association; clusters of events arranged chronologically in community calendar databases; topics and responses that are the ordered repository for asynchronous debates, conversations, and flame wars (The WELL, Lotus Notes, Web Crossing, Discus and dozens of other programs); and even ordered collections of visual objects including group photo galleries-a feature of some of the free services I will describe in this section; a whole web site based on templates using various forms of a database; and ICONS a free multimedia program developed by the World Conservation Union in Switzerland for use by non-profit organizations[3].

Free software. Freely available software in the form of freeware, shareware, functional beta versions, lite versions, pirated applications, and fully functional legal releases have been a staple of computer users, and the Internet has not only made the distribution easier, whole new offerings of software services now offer the individual, the small non-profit, or the mature enterprise a range of functionality at no monetary cost. This includes directory services such as Yahoo! and search engines for the Internet, other search engines, or some narrow topic. The rapid growth of HotMail and the subsequent offerings by other companies means that anyone with access to the Web can have at least one e-mail account. This allows people to compartmentalize their mail activities, to provide options for those who are only permitted to use their employer's mail system for official business, and to assume new identities with each additional mailbox.

Mailing lists have been the low common denominator method of working together and sharing information over many kinds of access points. It remains at the heart of the Internet Engineering Task Force and the Internet Society as well as thousands of interest groups around the world. L-Soft, the owner of LISTSERV software

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[2] www.nettime.org. December 1998 archive.

[3] www2.iucn.org/icons/index.html.

<www.lsoft.com/listserv.stm> donates free software to international schools, but FindMail's eGroups <www.egroups.com> allows anyone to start and manage a mailing list from their web browser. Within six months of a test launch, over 50,000 lists were started, making this the 37th most popular site on the Internet, according to www.hot100.com. The company makes money from target marketing to affinity groups by banner ads and "footers" which are text ads of 3 lines or less added to each person's message. Groups that have run mailing lists can have their archives stored and indexed at no charge. Phil Agre's esteemed Red Rock Eater digest has all of its past messages at eGroups now.

The taxonomy of the 75,000 lists included "Politics and Government" and within that "Democracy" which was remarkably diverse. Though there was very heavy participation by Indonesians and other SE Asians, there were groups for friends of Kurdistan, Malaysian Fabians, TWA Flight 800 theorists, Residents against Airport Racket, Yankee Go Home, and hundreds of others. Are these working? It's easy to set one up, decide if it is to be open or moderated, and who may subscribe, but running a group is more complex. Most of the American groups had a handful of messages over the past six months, sometimes none at all. The two exceptions were the Orgeon Libertarians that showed a growth curve from 3 in July 1998 to 132 in December 1998 and the TWA group that had between 40 and 200 messages a month. Other active groups include "hemp-talk" on the politics of hemp (hundreds a month), but the Project Vote Smart list has one message over the past year. Most of their discussions take place elsewhere.

Forums which take the form of asynchronous and threaded discussion on a single web site (or telnet host) have been used in some form since the 1970's. The WELL is a prime example of a successful one, but they have never been as popular as mailing lists, even with their added capabilities. Many journals, newspapers, and businesses use these, with varying success, to keep the readers and customers coming back. *New York Times, Salon, Utne Reader,* and *The Atlantic Monthly* have relatively active forums. Now, the portal services are offering this to anyone who elects to start a free Yahoo! Club or Excite Community <http://www.excite.com/communities/>. Many people seem to try the Excite software but do not return or spend time to attract members. "Black Crabs" (black people overcoming barriers) has one member. The most popular ones have between seven and fifteen members. Of the 485 non-profit groups, the most popular have between eight and ten members. For many the software is about as useful in making contact as a bottle, slip of paper and a pencil is to a marooned sailor. The Yahoo Clubs have more members, but the goals seem more social. "Copswhoflirt" is listed in the politics and government area. An early observation is that the ease of setting up these groups and low cost lead to incredible fragmentation and less connectedness.

RealityCheck is just one of the projects of the non-profit Web Lab <www.weblab.org/>. It is a web site promoting civil discussions of national issues under rules that are not oppressive but do seem to foster an openness and willingness to listen that I have not seen on totally open forums such as Usenet. Members sign up for a minimum four week involvement and are assigned to a discussion group that may focus on something like the impeachment but also has topics on other personal issues. I believe the organizers have set up an environment that allows self-selected participants to trust relative strangers rather quickly. People reveal as much or as little about themselves, but I was amazed at the true diversity of one random group. Outsiders can observe quite a bit and read archives. This is not a gated community (as Howard Rheingold's excellent Brainstorms is), and the people running the show have a lot of experience getting the word out. Only open since mid-November 1998, they have a dozen or more stories about the service. I think this is one that bears watching.
<www.realitycheck.org>.

One drawback is that the extra effort to visit a web site seems to be greater than reading e-mail. Many groups have opted to use e-mail instead of any web-based collaborative solution provided by Lotus, FirstClass, Motet, etc because their members won't use them. E-mail plus a searchable web archive seems to be a good compromise. Nettime, an influential Dutch mailing list for tactical media activists and network critics, uses this effectively. Web-based discussions depend on effective caretakers even more than a mailing list does.

The Excite and Yahoo! offerings also include free mail, a photo gallery, and a very important tool that was not available to many: the calendar. WebCal <www.webcal.com> was bought by Yahoo! and allows users to set up a personal calendar with shared items for public viewing (my speaking schedule, for example) and events linked to a global calendar. E-mail notices may be sent to the owner or anyone else as a reminder minutes to

days before the event. Many organization do not use this sort of special software yet; they just list the event with contact information in chronological order.
MagicalDesk <www.magicaldesk.com> is a new company that not only offers a calendar but also mail, a to-do list, bookmarks, address book, and 5 mb. of ftp space for files which can be shared with other MagicalDesk members.

Peer-to-peer communications software is enormously popular, much to the amazement of people who believe that systems like Notes, Caucus, Motet, Web Crossing, and all the other asynchronous ones are the best choice. This class of application includes chat, Internet Relay Chat (IRC), MUDs, MOOs, and the Israeli program called ICQ (I seek you). ICQ <www.icq.com> is a free program that many millions of Internet users have downloaded in order to keep track of friends who are online when they are. It is the 7th most popular web site. It allows text chat, whiteboard, exchange of files, once you register your client. There is a complex online culture of interest groups, lists of users, special chat rooms, web pages devoted to ICQ, to the sub-groups, and to new add-on tools that allow integration with other peer-to-peer applications. ICQ directories have hundreds of topics including volunteer services, social service, and of course religious and political groups. Citizen engagement is really just a side effect of the massive general use. Once it reached critical mass, organizations would recommend their members make use of it. Applications include coordination of phone calls, ties with music programs, and video conferencing. I am not a knowledgeable user, but my 16 year old son has a dozen friends on his ICQ panel and sometimes uses it to do Spanish homework at night, as well as chat. I spoke with a consultant on municipal telecommuting issues who said he had recently pulled the plug on ICQ because it was such a time sink. He had not seen it used in any kind of civic collaboration project but admitted he had not tracked all the thousands of groups using it.

Self-organizing groups become possible with these web-based services. Linking a Yahoo! club to a MagicalDesk site allows the trusting user to rely on free offerings from several companies without having to pay or to host on a personal machine. Another way of organizing web activities among groups is the WebRing <www.webring.com> which started in 1995, is now commercial, and was bought by GeoCities. It still is more grass-roots than the efforts of Yahoo! and Excite to organize information. WebRing software lets web site managers link up similar sites, each sharing links in a democratic fashion. The thousands of webrings are groups in the usual subject headings. “Democracy” turned up webrings for U.K. Liberal-Democrats, Taiwanese sites for student political groups, and patriotic Americans. “Civic” hits included as many webrings about Hondas as about civic life. The webring phenomenon is also found in TheRail, <www.therail.com> which uses the railroad, junctions, stations, and trains as a metaphor for grouping information.

The Education Object Economy <eoe.org> began as a joint academic/Apple Computer project supported by a large NSF grant. Using FileMaker Pro <www.filemaker.com>, a complete template was developed to set up and run a web site that is the largest collection of Java applets online. Then the software was generalized and realeased for free. The Generic Object Economy site distributes the software, tutorial, and links up other GOE sites. Much of the interest in the EOE is the new way of strengthening the gift culture that still has vestiges in the current Internet environment. The site includes many thoughtful papers about how the International Cooperative Organization in Geneva, Switzerland, is launching a GOE site. This is a compelling example of how a database package costing less than $200 can serve as the foundation for a locally-controlled web site with low maintenance and ease of use. However, the non-profit organization responsible for this site is searching for stable sources of funding, and it has lost some momentum since the Fall of 1998.

GIS Geographic Information Systems have traditionally involved expensive software, powerful computers, and highly trained specialists to enter, manipulate, and make use of the spatial data generated by such systems. Some people believe that GIS can reinforce power structures, while others think it is more subversive. There is a recent development known as “Public Participation GIS” where the tools and data collection and analysis are made available to the lay person. In October 1998, the National Center for Geographic Information and Analysis organized a meeting of GIS specialists. The theme was “Empowerment, Marginalization, and Public Participation GIS.” <http://www.ncgia.ucsb.edu/varenius/ppgis/papers/index.html> has all the submitted papers including pointers to public projects such as Portland, Oregon’s Metro Map <http://metromap.metroregion.org/> and a discussion of the problems of working with community development corporations in Philadelphia (difficult software and turnover of volunteers at the

neighborhood level). “Using GIS Technologies to Empower Community Based Organizations in Hawaii” by U. of Hawaii’s Karl Kim discusses the way opposing sides would use and misuse the data, leaving out some in order to change the analyses. A further investigation into this topic reveals academic debates about openness, ability of the average person to master the software and systems, and a range of technical issues that are beyond my ability to place in any context for this report.

Youth mapping projects have been efforts in cities to engage young people at risk in activities that help them learn about the community and its resources, map them to a GIS system, and share the information with citizens. <cw.ci.baltimore.md.us/news/progress/dec96/youth.html> describes a 1997 Baltimore training session. Some youth mapping seems to be a program of the Department of Justice <www.usdoj.gov/kidspage/getinvolved/1_1.htm> with subtracts to the Academy for Educational Development <www.aed.org>. The lack of links or hits in recent years indicates it may be a good idea that never took hold in practice. I believe, though that spatially viewing organizational life of a community is revolutionary and will become increasingly commonplace.

4 Leaders

I had conversations with several people as I researched this study. Because of the short time frame I was unable to speak with Robert Putnam at Harvard. However, I did correspond with some, rather than use the telephone. All of these people are combining ICT into their lives as activists, community organizers, and change makers. The other important common trait is their ability to bridge very different worlds: social justice, software design, venture capital, city government, high tech management, rural disenfranchised, foundations, academia, and organizations working on public access projects.

The following four leaders have combined innovative technical programs with organizations that have established strong ties in the places they serve. ICT programs for the public have a difficult time if the organizations (or institution such as a library) is not closely integrated into the local environment.

Warren Hegg is director of The Digital Clubhouse. This non-profit located in a shopping center in Sunnyvale, California, provides free training, access to the Internet, and courses on digital storytelling, using several dozen high end Macintosh and PC workstations. All of these have a fast connection to the Internet. They are working on some projects with the local public library, but most of their activity involves community organizations, especially those that would have trouble getting online or learning the advanced skills provided by the Clubhouse. Its strengths are the training staff, the strong emphasis on people meeting people at the center, and the interest taken by the high tech business community in Silicon Valley. This non-profit franchise model is being replicated in other U.S. states (Maryland and New-York), and other countries have expressed interest in setting up their own. <www.digiclub.org>.

Toni Williams is director of the Austin Learning Academy in Texas <www.alaweb.org>. Her background is in education, and her academy, located in a rented house in East Austin, has stressed technology coupled with learning for whole families. The parents need help in order to work with their children. One project involves families building new computers and buying them for a very low price ($50 to $500). ALA has also participated in the East Austin Community Network <afn-neighbor.net/eacn/index.htm> which includes a historic tour of the area. Williams has lived in the area for many years, and her organization is trusted and receives funds locally and from national sources such as TIIAP. The odd thing is that Williams does not use electronic mail. That is to say, she does not answer mail, but will use the phone as her tool of choice when communicating.

Ethel Long-Scott started the Womens Economic Agenda Project in Oakland, California, more than fifteen years ago. It was and is a social justice group that taught poor people skills to use in public as well as entrepreneurial skills. Later, they purchased a large office building downtown and earned a reputation as good managers with satisfied tenants. Now they are working on computer literacy programs with families and are going to be a Cisco Regional Academy, providing training to other Academies in the Oakland area. <www.weap.org>.

Ed Schwartz is a community organizer of thirty years, mainly in the Philadelphia area. He has served on the city council, worked extensively in neighborhoods locally and is now speaking to groups such as Neighborhoods USA to share the lessons he learned over the years. In 1996 O’Reilly published *Net Activism*, and Schwartz admitted that it was remaindered after 3 months. It was too specialized for the computer book trade

and not enough activists were online. He now sells it from his web site, and he said the lessons in the 3 year old text still hold true. He is devoted to mailing lists coupled with web sites. Neighborhoods Online <www.libertynet.org/nol/> provides links and information about Philadelphia neighborhoods and local issues and a section on national groups and agencies that deal with neighborhoods. He has links to Web, White, and Blue as well as Build-Com a listserv on neighborhoods. He has support from the Surdna Foundation in New York, among others.

Dan Atkins was Dean of the School of Information at University of Michigan. He is now head of the Alliance for Community Technology, a Kellogg-funded project at the school <www.communitytechnology.org/index_old.html>. The Alliance for Community Technology links philanthropies, universities, and communities so that information and collaboration technologies can be used by people to meet social needs. ACT is a partnership of the W.K. Kellogg Foundation and the School of Information. The goals of ACT are to support Kellogg Foundation grantmaking through education, consultation, and resource brokering related to the application of information and collaboration technologies by people and communities; to help the foundation develop an internal learning system; and to connect university faculty and students with Kellogg Foundation program officers and their grantees to advance research and education in the human-centered application of information and collaboration technologies.

They are analyzing collaborative tools and have received over $2 million from Ameritech to work out a taxonomy and classification system for this kind of software. Their main interest is the way in which ICT can enhance learning, especially learning outside of traditional classrooms: virtual environments, after school settings, international electronic forums, and for all kinds of non-academic users. Atkins and a group of graduate students in Washington, South Africa, and Michigan, have been using a new groupware program called PlaceWare <www.placeware.com> that uses the metaphor of an auditorium. The speaker uses PowerPoint, audio over the Internet, and chat software tools to interact with the students. They, can communicate in auditorium rows in a sort of breakout group. So far the interchange has been much richer than afforded by other kinds of software, and it is an indication that complex programs can work if introduced and supported properly. Atkins moves between many interesting worlds and influential thinkers and doers. He is a man to track.

Paul Resnick also teaches in the School of Information at University of Michigan and is looking at the way ICT can build social capital. He focuses on small groups, a neighborhood or even a city block. Resnick believe the groups should be geographically bounded (e.g., new mothers in town; parents of kids in a school class), possibly but not necessarily geographically defined (e.g., block clubs). One important use of communication technology is to enable "peripheral participation", so that people can still keep up with a group's activities even when they don't participate actively. E-mail distribution lists with only a few members will be very important for this. ICT is useful for coordination of face-to-face activities: planning a potluck, reminder of events, and all of these tools can help strengthen the group's identity. They are experimenting with digital photos and a block directory in Ann Arbor, Michigan. Their reports will be out later this year and should be tracked.

The Appalachian Center for Economic Networks in Athens, Ohio, is successful largely due to the drive and skills of its two leaders, **Amy Borgstrom** the Executive Director, and **June Holley**, the President and Founder. However, the work they have done is to make an organization that is strong enough to flourish without them. I include them because they have a sophisticated knowledge about social networks and the appropriate ways that electronic tools can be used to help the individuals become more involved and to accomplish a lot more than with traditional means.

They work with local youth, entrepreneurs, and women on assistance to help them learn new skills. The activities are a combination of technical learning, networking skills, and involvement in economic activity including web business, online searching, computer repair, and flexible economic networks for food production. FoodNet is comprised of 200 people around the U.S. who run cooperative kitchens where individuals can rent and make commercial batches of speciality foods for sale. FoodNet members have met face-to-face but continue using e-mail. Both June and Amy believe that having the focused discussion as e-mail messages is more valuable than any other kind of interface (chat, asynchronous conferencing), and the members pay attention to the content because they are not on dozens of other lists and do stay focused on practical issues. The list is run like a meeting with

experts and topics that are time delimited, not open ended philosophical discussions which tend to attract certain types of users. Holley says we need more social network analysis, and that some software (unnamed) has been developed to analyze this, as it is manifested online. She believes that the online skills are being used in face-to-face and local communities. It is an opening up of possibilities in terms of action, information, and personal contact that is very different from the semi-isolation many practitioners lived with.

ACEnet has also worked with the Ohio State University-Athens Institute for Local Government and Rural Development. They are placing networked computers on the mayor's desks in tiny hamlets in Appalachia, and they remarked that the mayors generally do not want to hear from the voters!

Borgstrom has also been very supportive of the local community network, and she is president of the Association For Community Networking <www.afcn.net> and is a board member of CTCNet run by EDC <www.ctcnet.org>. I consider the online activities of ACEnet in the daily life of their town to be among the most integrated anywhere in the United States.

Stephen Bajaly is a professor in the College of Library and Information Science at the University of South Carolina and manager of South Carolina's MidNet. ALA Editions from the American Library Association will be publishing *The Community Networking Handbook,* his new study about community networks and public libraries. He sent out an e-mail survey to several hundred sites in the United States and Canada. and found that response was rather low for organizations that purported to support community activity and involvement. He said there is no good directory listing of all the community networks in the United States or Canada. Bajaly estimates there are between 200 and 300 in the United States. In Canada, the Community Access Program has set up hundreds of public access sites in public places, and these are considered by some to be community networks. Others say they are merely access points to the Internet. Bajaly has spoken with many librarians and believes that many are reluctant to take the lead on any kind of community networking activity. Both he and I believe that activities to shore up public places includes electronic options, and libraries that ignore this are going to lose an important opportunity, especially with regards to engaging the youth, a sector that is less supportive of public libraries, according to a Benton Foundation report, than other age groups. Bajaly's work points out the problems in even estimating the level of activity, the fuzziness of the terms (community and networking), and the sporadic cooperation between various groups in a locale to provide a community communications infrastructure.

Al Shugart, ousted founder of Seagate Technology, has started a California organization called Friends of Ernest PAC. Named after his dog which he tried to enter in a congressional election, Shugart is trying to get "None of the Above" on every ballot as an option for voters who wish to protest the slate as presented. This has been an option on Nevada ballots since the 1970's. Though Shugart has no web site yet, he is a likely candidate for using the net to organize this sort of anti-civic involvement project as a way of shaking up politicians as a class.

Doug Schuler is a member of CPSR and author of *New Community Networks*, a 1996 publication that is the only general introduction to the subject. Schuler has a strong interest in community networks as examples of non-commercial public space, and the CN that he founded, Seattle Community Network <www.scn.org> runs on this principal. His strong principles, however, have made cooperation with the city and the university a little problematic. He is also wary of trying to make SCN more than a voluntary effort involving massive fund-raising from government and foundation sources.

In November 1998, he helped plan a participatory design conference where all the presenters focuses on community networks There are a series of papers from this workshop, including many contributions from outside the United States. Schuler's links to the groups interested in human interface issues, democracy, and CPSR makes him another important bridging personality.

Tom Sander is director of the Harvard Saguaro Seminar, organized by Robert Putnam. I asked him about the issue of ICT and social capital. The fourth one held in 1998 focused on politics. The participants reached these tentative conclusions:

"1) movement towards direct democracy seems inexorable and is likely to behastened by technology (once verification of signatures is do-able on line people can *sign* ballot initiatives, and vote on line);

2) fears that direct democracy will not be as deliberative democracy;

3) concerns of cyberbalkanization through the technology (we'll talk to those like us but not those different than us);

4) some questioning of whether increased use of internet (sic), etc. is likely to lead to more or less social capital.

In other discussion of technology at Saguaro, we've discussed how to use technology to possibly reinforce FtF social capital or geographical social capital but we're still working on tangible ideas here."[4]

5 Projects

What follows is a selection of projects that have a strong online component or are totally online. While I acknowledge that some people are spending much of their intellectual and social life on the Internet (see Sherry Turkle's *Life on the Screen*) most of us still live in the real world. The net-based projects I include are examples of effective campaigns that could not have taken place in the same time frame five years ago. There was just not the critical mass of voters, citizens, lay people who were online then. Now, in the United States, there are. In addition, I have included a few that started strong and are now languishing or abandoned.

Joint Venture: Silicon Valley Network <www.jointventure.org/> is a regional planning group to bring to members of the community together to solve different problems. Silicon Valley 2010 was an exercise that involved area leaders and average citizens who met in small groups in a dozen locations. While the high tech industry is a major force in this group (as it is in other company town environments) the use of electronic tools was not excessive. They relied on print mailings, printed reports, as well as extensive web information (but little interactive components), and well structured face-to-face encounters with many sectors of the Silicon Valley. In the meetings they used electronic voting devices to speed along the process, and after each vote the results, in the form of a bar chart, were displayed. This tool cut down on the deliberation by participants, but they did not mind using it. The lesson I learned was that even high tech areas need to use traditional ways of soliciting feedback and cooperation.

Net Day '96 (etc.) is an example of a very high profile project that was driven by technology and the agenda of John Gage of Sun Microsystems and the White House. It has had a high profile and some great successes, but it was flawed in its reliance on web technology at a time when many people were not online, and the organizers' view that teachers and administrators were somehow to blame for not wiring up the American schools. This caused the organizers to route around the staff and principals and "go directly to the people" by calling for volunteers only online, by soliciting hardware and coming up with a plan that affected schools but did not involve them until it was too late to understand the school's limitations and operating culture. As an example, technical people in a neighborhood signed on to the web site, looked up a school near their home and signed up to help out. It was a neat application of a simple map program and form for enlisting local support. However, the principal was not online and did not even know there was an event or that a group of volunteers would appear at his doorstep on a Saturday in March of 1996. This kind of disaster was avoided in subsequent Net Days in other states, but many of the organizers had already declared this project as a top school priority and did not involve anyone except other technical people who were in agreement. There was also lack of follow up on training, making sure the wiring was done right, and other important factors. It seems to have lost momentum in 1999.<ww.netday.org>.

Publius <www.publius.org> is an impressive and easily understood site for Michigan voters. This non-profit is dedicated to putting all the election ballots online, encouraging candidates to provide supplemental information, and working with community groups to help recycle computers to those without. Their timeline shows encryption techniques to be workable for online voting about 2005 with acceptance by the voters a few years later. This is definitely a group worth watching. Their stated objectives include:

- create the central recognized public resource for election information on the Internet;
- improve government through increased informed participation;
- develop ethical principles to navigate the effect of emerging information technologies on democracy;
- develop Necessary Technical Solutions to Facilitate Electronic Democracy .

"My Ballot" was a feature used in the last election: Registered voters enter their name and a sample ballot appears, complete with candidates, issues, and links to other pages sponsored by the candidates. About half of the candidates did not have links when I entered a Michigan friend's name and saw his unmarked ballot. Crackers

[4] Personal communication, January 20, 1999.

brought the server down shortly before election night, but it is back up again and well worth a look. They use an understandable metaphor and provide a clear service that could be scaled up state by state.

E The People <www.e-thepeople.com> claims to be "the the fastest, easiest way to be heard by any one of 140,000 local, state, and federal officials serving 7,000 towns and cities across America." Moving from page to page you fill in information about yourself, your zip code, and the town officials are displayed. The city of San Jose's were incorrect, except for the librarian, whom I know, and who is not elected. I could fill in a form, click on send, and E The People informs me that the e-mail will be sent in the next three days. It is not as easy to use as Publius and seems much less engaging. Admittedly, this is a national system, and it will be harder to keep the information correct, but knowing that they have not changed it since the November 1998, elections is not reassuring.

Project Vote Smart <www.vote-smart.org/> offers quick and useful political information. Put in your zip code and see your elected representatives. I am impressed that they allow an alternative way of providing information: by the phone (888-868-3762). The details in the way the voting records of the Congress members are analyzed are unmatched. George Miller (D) California has served for a long time. (His claim to fame for me is that he visited a garage sale I had about 25 years ago.) Each interest group has rated his record for at least one recent year. Not only can you see a profile that tracks dozens of issue, you can find out about the organizations themselves, some of which are very obscure. This is an amazing resource that five years ago might have been available for a high hourly rate, with the help of a professional researcher, and now it is free. The "issues" area tracks information and organizations about 45 topics. Immigration not only has more than a dozen organizations, it includes archives of Supreme Court decision and *Atlantic Monthy* articles on the topic. I can see this used in conjunction with RealityCheck discussions.

Minnesota e-democracy <www.e-democracy.org.> is a well-known web site that has many areas to explore or depart from for further political information and mailing lists. Working with Twin Cities Free-Net, a St. Paul issues forum has just started this month (January 1999). TFN uses a conferencing package known as Caucus, one of the many asynchronous systems that emerged out of Michigan in the 1970's. Caucus is very powerful, perhaps too much for some novice users, and the TFN signup procedure could be easier. Steven Clift's Democracy Online site also resides here and contains his slides and speeches, articles, and requests for sponsorship. He also archives the DO-WIRE archives from his moderated mailing list.

Of course many people are more aware of Jesse Ventura's campaign and victory than they are of Minnesota e-democracy, but Clift is in close contact with Ventura's campaign manager and forwarded a December 1998 e-mail article by Phil Madsen (see the electronic appendix). The salient features of this site and the way it was used included: no links to the outside. Attract the visitors and keep them there; volunteers were used for data entry; donors to the site contributed heavily; the cadre of e-mail recipients on Jess Net were used to squelch a rumor that Ventura favored legalized prostitution ("Jesse Net members rose as a statewide force of truth-telling missionaries.") I am certain the tactics used by Madsen will be studied and emulated in many elections in the near future. Aside from Ventura's colorful personality, it was an amazing campaign.

The Center for Civic Education <www.civiced.org> is a California non-profit that provide civic curriculum for elementary and secondary schools, participation in state and local government by students, a "Youth for Justice" program with the DoJ, exchange programs the eastern European nations involved in similar programs, and some community programs involving youth and substance abuse prevention. Their web site also includes a list of other civic education organizatons, including the Civic Education Project at Yale (which is aimed at eastern Europe). Solid but not very compelling.

Civic Practices Network <www.cpn.org> is run by Carmen Sirianni of Brandeis University and an editorial team. It has a beautiful design, a fine group of editor/advisors on environment, community, networking, etc. but no information more recent than June 1998 is in evidence. Perhaps this is another web ghost town now, but there is not indication this is officially abandoned.

SERVEnet, 1101 15th Street, Suite 200, Washington, DC 20005 <http://www.servenet.org/> If you just want to volunteer and have nothing special in mind, you can put in your zip code and see the places to contact. Some of the 20 in the Silicon Valley listing including YMCA's that are little more than an exercise center for affluent suburbanites. Nothing remotely Christian or

young or male about their offerings. An individual may fill in a profile so that SERVEnet can send you relevant listings and announcements. Non-profits can join at no charge and post calendar events, job listings, and news. As with other national sites, the user does not fee grounded in any one place.

Censure and Move On <www.moveon.org> is a site that exemplifies the speed at which an issues campaign can be mounted, using the World Wide Web. The owners of Berkeley Systems started the site in September 1998 and had more than 450,000 visitors sign petitions urging Congress to take action. They call describe this flash campaign on their web site: *A flash campaign is a completely new phenomenon emerging from the radically reduced cost of communicating. Traditionally, political campaigns have been run by existing organizations with long histories, high overhead and inertia. This campaign literally sprang from nowhere, with no affiliations or external funding. This is only possible in a world where you can communicate with 100 million people for $89.95.* After the House of Representatives proceeded, a new campaign was started to unseat those who voted for impeachment. According to the *New York Times* people have pledged ten million dollars.

6 Public Access Computing Centers

Telecenters, telecentres, telecottages, community technology centers, networked learning centers, multipurpose community telecentres, digital houses, cabinas públicas, espaces numérisés, telestugen, and learning access places are some of the names that are used for places that provide a range of activities and services that include access to information and communications technology for individual, social, and economic development. There is no agreed upon definition, except that each center has a physical space and some information technology for public use. There were projects in the late 1960s and early 1970s to allow public access to computers, but the first telecenter was established in Velmdalen, Sweden, in mid-1980s. They have spread all over the world. Not everyone is going to have a phone or computer in their home. Telecenters help meet the goal of "universal access" by providing community-based access to this technology. Some would say that the thousands of small offices that provide phone and fax service in Senegal are telecenters. Some centers also include satellite links, video production equipment, digital photography services, computer repair and distribution services, rental of office space, and provision of Internet services to off-site users. Most of the centers are somewhat more modest than that, but it is crucial to remember that even the most connected, the most wired cities and regions such Silicon Valley California and Parthenay, France have these centers.

International development agencies as well as organizations such as UNESCO and the International Telecommunications Union (ITU) have, in the past two years, stepped up their activities to establish telecenters in many countries around the world. In many places, libraries have no role in the deployment or maintenance of these centers. I believe, based on experience in the U.S., that the lack of involvement by libraries is a mistake. The libraries lose the ability to strengthen ties with other groups in the community as well as donors, telecommunications companies, and other sectors of government. National libraries, as well as IFLA, need to partner with some of the national, regional and international players to share our own skills and commitment to service that have been the hallmark of our profession, long before there were computers, or even telephones. Without that commitment to service, the telecenters suffer.

The successful telecenters include a strong training program, secure and well-maintained equipment and links, a business plan that makes the center sustainable, and a sense that the center is a place that community members want to use and feel pride that it is in their town or neighborhood. Having strong community involvement can help with the other points because resources from both inside and outside the community will be more readily available.

This description does not differ from many a good library technology project, and indeed, some libraries are providing much the same kind of services as are the telecenters. In the United States, the **Community Technology Center Network**, which is comprised of 250 grass roots organizations, has 10 library sites as members. Other organizations include boys and girls clubs, community centers, churches, some schools that are opening their doors to the public after the children are finished for the day. For exploration of web resources, the CTCNet web <www.ctcnet.org> site is a very good starting point. It lists the members, a complete setup manual in English, and includes addresses for online discussions of these issues. CTC is currently under the wing of a large non-proft called EDC. The new director want CTCnet to be a separate non-profit, but there

is some reluctance on the part of EDC to allow this to happen. There has been a fund-raising campaign, and Kellogg has expressed interest in supporting the organization. Many of the members joined a couple of years ago in order to qualify for donations of lab equipment by Apple. The ratio of applicants to recipients was low, but now CTCnet has lost some of its corporate support and some members have not renewed their membership. The mailing list is moderately useful, but it is dominated by a good-hearted and verbose technical assistant named Phil Shapiro, and most members post little or no news about their projects. There is a great disconnect between the telecenter projects described below and CTCnet. Just last month the ITU discovered the wonderful manual that CTCnet had developed.

I took the manual in html to different countries in Latin America over the past two years. Finally, in Paraguay, Sergio Aranda, coordinator of the networked learning centers in Asunción, localized the text and added a CD-ROM of municipal data that he had squeezed out of reluctant city officials. This was a great accomplishment, and we are waiting to redistribute this Spanish adaption elsewhere in Latin America. See my trip report on Paraguay for more information on this fascinating project <home.inreach.com/cisler/paraguay.htm>. What follows are a few examples of different public access projects in various countries.

Training Center, **Wa, Ghana**. This is a town of 80,000 and only fifty computers. It is 17 hours by bus from Accra, the capital. The telecomms costs are high within Ghana, and the phone line to the capital is not reliable. Electricity is available most of the day. With a Small Project Assistance Grant, Tod Bruning, a Peace Corps volunteer, established a small center with three computers, modem, and Internet access. Students may take courses for about $50 each, but this is much less expensive than commercial classes, and most students can double their pay from the skills they learn, even though the demand for Internet services is not high in Wa.

Dover, Tasmania, is the southernmost town in Australia. This seaside town of 500 has one of the most stable telecentres in the Australian Rural Telecentre Association. Dover Community Telecentre Inc. provides desktop publishing services, hotel and inn bookings, information on local crafts, art, and gourmet foods, as well as e-mail and fax services for visitors.

In **Parthenay, France**, the city is setting up seven digital spaces. The first is in the Armand Jubien Social Centre, and besides providing access to new media services, it will be a place for people to meet and exchange ideas about the technologies. This is supported by online discussions using electronic bulletin boards as well as free Internet access for the citizens.

UNESCO and the **ITU** are backing rural multipurpose community telecenter (MCP) projects in Mozambique, Mali, Suriname, Honduras, Uganda, and South Africa, and other countries may be added. These are meant to be self-sustaining financially. The Peruvian Scientific Network (RCP) has set up 24 cabinas públicas in towns around the country for public access.

Industry Canada's Community Access Program (CAP), has funded more than 2200 rural systems, many of which are located in public libraries. The goal to make Canada the most wired nation in the world by the early part of the next century. The current budget has money to establish 5000 urban centers as well. The Canadians are also helping other countries set up Multipurpose Community Telecentres and have provided a guide for the African projects.

7 Community Networks

As I mentioned in the opening paragraphs, the experiences of the innovators in Cleveland, Ohio, were very influential, and even in the late 1980's I was aware of different models for setting up a community network. By the time Apple began supporting these efforts in 1992, few were aware of the Internet. Most talked in terms of local content, local dialup lines, and sometimes systems that were interlinked by an arcane protocol known as TCP/IP.

The community networks both benefited and suffered because they grew up in the shadow of the explosive Internet growth. Many people volunteered to help out with these networks because it offered something very tangible: free access to a new way of communicating that was different from GEnie, Compuserve, America Online, and Prodigy. In some ways it was much cruder, but it was controlled by local administrators who were part of democratically chosen team or a team that was responsive enough that democracy did not matter to most users. They wanted service, and if the community network could deliver, they would support it. However, as the number of Internet Service Providers expanded, the number of community networks did not grow at the same rate. People moved up and away.

The Morino Foundation <www.morino.org> supported the gathering of information and web publishing of something they called the PAND, Public Access Information Network Directory in 1994. It listed many community networks but not all of them, and it was revised by Kaye Gapen of Northern Lights consulting in 1996, again with support from Morino. There were many missing sites at the time it was re-released <www.clir.org>, and elsewhere in this paper we have commented on the difficulty in acquiring this information. The exhaustive form provided for PAND subjects was so long that few would take the time to fill in that much data.

The School of Information at University of Michigan, in a program run by Dr. Joan Durrance <www.si.umich.edu/community/>, publishes a newsletter and resource-laden web site that includes a long listing of known community networks as well as background papers and theses. While I do not consider this complete, it is the best ongoing effort at keeping track of what is going on in American community networking in 1999. **The Association For Community Networking** <www.afcn.net> is rebuilding its web site with a new team of volunteers. This group represents about 75 individual and institutional members in the United States. It is raising funds for rehiring an executive director. Our support from Kellogg, the Morino Foundation, University of Michigan, Apple, and the city of San Jose, has not been enough to give our group very much stability. Currently, we are using volunteers to do a quarterly newsletter, plan an annual conference, and run a members-only mailing list. This low level activity could continue almost indefinitely, but most members believe the importance of community networking warrants much more support from outside the organizations and a more ambitious national program.

Some companies that see the word "community" and want to encourage AFCN to support its agenda have made overtures to convince the organization to support the use of such packages as Lotus Notes, KOZ community publishing system, and AOL's campaign against ATT/TCI in the cable modem service wars now under way. Most commercial services are operating without paying much attention to the small incumbent community systems.

Commercial services are competing with each other in some large markets. **KOZ** <www.koz.com> is in Research Triangle, NC, and their main product, Community Publishing System, is marketed to newspapers and now schools and other organizations. IBM is a marketing partner. It offers tools for end users to publish and manage a collection of information and services that "mirrors real-world organizational structures." It runs on a central server with Informix database in North Carolina. There is a free service called Family Shoebox similar to Excite communities or Yahoo! clubs. OrgWare is for hierarchical organizations that has chapters or satellite offices. KOZ powered communities are featured on the home page, and though they sound vaguely familiar, it's hard to place their location. For instance NJOnline is North Jersey. Click and a rather busy page finally comes up, complete with blinking ads, and weighing in at over 100 kb. If you click on "libraries" it displays a table of links that include the newspaper that sponsors the site. This site feels like what it is: a database without a human touch. In the same area another service is operating.

ThirdAge <www.thirdage.com> I know Mary Furlong and am aware of the long history of Senior Net and Markle and the origins of Third Age. This service has partnered with Conde Nast, and their paper in New Jersey runs New Jersey Online <www.nj.com> which has offered some services that other community networks have not. Third Age targets an age group that sees itself as active, with a new freedom, and perhaps even self indulgent, not just retired folks wondering what to do before their children put them in a rest home. The NJ site, however, contains many activities and organizations that offer any user, not just seniors, a chance to become more involved. There is a section on "community leaders" which are actually part time employees of New Jersey Online. For 5-10 hours a week of work online, they receive a $200 *honorarium* and a *connect stipend*. Note the terms for the payment, as opposed to "wage" "fee" or "salary". It is still to early to know if these ventures will justify their cost and existence to the sponsoring newspapers, but the social outreach, combined with an ethos that support public journalism, might revitalize some small newspapers.

The key issue for U.S. non-profit community networks is to find what services will differentiate them from libraries, ISPs, city web pages, commercial services such as CitySearch or Digital City, and the answer varies from place to place. Everyone says that community networks serve those who are not in the market plans of commercial firms, but the source of funding to support this goal is not readily evident. Community networks do not qualify for e-rate funds. The IRS is planning to audit several CNs

which provide low cost dialup service, and a ruling that prohibits any 501 (c)(3) from selling Internet access could shut down systems such as La Plaza in Taos, New Mexico; Seattle Community Network in Washington, and Charlotte's Web in North Carolina. Legal assistance from Center for Democracy and Technology is a possibility, if funds were available.

Infowar. Radical Reactions to ICT include political groups using the technology for political protest, rebellion, and to confront and cripple a more powerful opponent. There are also some instances where computers and the Internet are rejected by activists. All of these people are engaged, but in ways that makes mainstream America somewhat uncomfortable.

Hacktivists include Internet activists who attack sites and shut the server down or change the message on the web site. A Mexican group called X-Ploit put the face of Emilano Zapata on the Mexican Finance Ministry's web site in October 1998. In August, 1998, Kaotik Team attacked Indonesian sites, calling for independence for East Timor. In January 1999, Indonesian hackers shut down the East Timor web site in Ireland. Chinese and Taiwanese have sent mail bombs to Indonesia protesting the brutal treatment of ethnic Chinese.

Electronic Disturbance Theater was founded by Stephan Wray. His team has created a Java applet called FloodNet that repeatedly calls for a non-existent page on the targeted web servers which have included sites in Mexico, the United States, and Germany. This is not automatic. Individual users launch the program, and Wray estimates that over 10,000 people blanketed the affected servers with 600,000 hits *per minute*. The motivation for participating is unclear to me, considering the fragility of the web sites run by progressive or alternative groups around the world. Wray, a native of Austin, Texas, was unable to access his article published in *Earth First!* because of blocking software installed in Austin Public Library. For some reason, he did not see the irony of being denied access by another kind of software and contemplated bringing suit against the library.

Other groups, supported by Soros' Open Society Institute, include B92 <www.b92.net/> a non-governmental radio station in Belgrade that made use of RealAudio to get its message out after the Serbian government put them off the air. Currently, files are available in Serbo-Croat, English and in text, html. pdf, and RealAudio formats. As Geert Lovink, a Dutch activist and writer commented to me, "For sure B92 they entirely depend on internet (sic) and holbrooke and the CIA/Pentagon etc. (no joke). I mean this in a good way. The Internet is becoming a "shield". The broadcasting is a life line, not a medium as such. It is reaching fellow mediators, who then spread the news via the "old' channels."[5]

Many international activists must operate outside their native lands. Even in the early days of the World Wide Web, Kurdish independence activists ran a server in the Netherlands, a radical muslim group had one in Norman, Oklahoma, and today there are Burmese exiles operating on the border in Thailand, Zapatista supporters in Texas, Assyrian emigrants in Modesto, California, and East Timor rebels in Ireland. There is a place, albeit not a large one, for many, many dissident voices.

Some groups choose not to use these tools. American Indian Movement activists in California told me they had no use for the electronic tools (except the phone) and preferred to drive long hours to meet face to face with supporters. A proponent of local currencies who lived in Boulder, Colorado, wary of government surveillance, said he would not use the Internet for communication, only information retrieval and only at a public library. Both he and a CIA contact knew the value of the anonymity of public e-mail access in a library branch where the person using the computer is not recorded or logged in. American intelligence experts have complained about the low electromagnetic profile of the Zapatistas who use conversations and runners to move many messages to the outside world. There is a group of radio activists in Holland who convened a design charette/roundtable to discuss the creation of an "Insular Technology Network" using high frequency data radio transmissions to link up alternative multimedia labs around the world. This took place in Rotterdam in March 1999 during the Next Five Minutes 3 Tactical Media conference. The conference report is here: home.inreach.com/cisler/n5m3.htm.

8 Conclusion: Only Connect

In 1998, the anit-MAI forces which included such groups as the Malaysian-based Third World Network and the Council of Canadians effectively used the Internet to keep each other informed of the very local actions that were taking place, and ways to coordinate G7 protests and to help

[5] Personal communication. January 24, 1999.

educate the public who still has very little idea about the ramifications of this agreement. The activists in Seattle demonstrating against the WTO could not have succeeded without the use of the Internet. Philippe Riviere wrote about this in *Le Monde Diplomatique* in November 1998 and asked if this heralded the arrival of a "trans-national civil society" versed in the ways of multinational firms and the many tools of the Internet that would be useful to activists in every country.[6]

In this study I have tried to show how all kinds of people, not just technical experts and true believers are learning more about the activities around them and are becoming more engaged electronically. The paradox is that the tools improve, the interfaces become more transparent, and the content becomes more compelling, thus making the online experience more useful, even more seductive. This can lead to more screen time and less interaction in the unmediated world. Why go to the polls when you may vote from your bedroom? Why visit a town hall meeting when you can take part in a mailing list or watch a RealVideo transcript or webcast? The reason is that the live experience helps validate the austere, cool connections made via ICQ, the web, e-mail, or even video conferences. John Perry Barlow commented that the most wired people have the most frequent flier miles. At a local level, this translates to people most aware of the local web activities and electronic discussion may get out more and take part, act, become involved with the potlucks, the trail repairs, the tornado clean-up, or just the public debate of school board candidates.

In the past four years I have been to half a dozen town hall meetings where local citizens are confused and excited about the implications of the information and communications revolution. Some of their hopes are unrealistic, and they equate a high speed data line with immediate economic well-being, but at a more personal level successful activists in all of these towns and villages know how to link peoples needs with the tools and resources on the Internet as well as with each other and sources in the town. This is the strength of women like Toni Williams in Austin and June Holley in Athens, Ohio. The tools have to be easy and sturdy enough to merit the investment of time away from other activities, including doing things the old way. I have tried to show which tools are catching on and why. The projects listed ranged from web-based clearninghouses and theme-based watering holes to national movements like community networks and technology centers that are not quite on the radar screen of many influential people, and I have included some extreme examples of techno-activists who believe they are at war, even though they may never see the system administrator whose server they flood. Word must come back to them by traditional media as well as the electronic grapevine.

Where should interested parties focus their energy to promote citizens' rights through the use of ICT? New uses of common tools, open source solutions from the Linux developers (who are finally working on interfaces for normal people), the dynamics of electronic mediated self-organization whether it is for FoodNet or for the "trans-national civil society." Underwrite a reliable survey of public access networks and computing sites. Investigate the way e-rate can be broadened to include non-profits. Convene a meeting representing a wide spectrum of views and expertise on micropower broadcasting which has tentatively been okayed on January 29, 1999, by the FCC. As we know old media do not go away (unless we discount 8-track!) new ones overlay print, television, and radio. While I'm not a big believer in convergence, the media will be recombining in unpredictable ways. Help those experiments along when it involves the underserved, segments of the populations who have not taken part, and just a few crazies. Who knows, you might be helping the next Nicolai Tesla or Hedy Lamar!

9 Appendix of background articles included with this report

"Inside story on Ventura Internet use" DO-WIRE December 10, 1998

"How the Net killed the MAI" by Madelaine Drohan. nettime April 29, 1998

"Internet Treasure" by Andrew Shapiro. *Boston Review*

"L'affrontement des mondialisations?**"** by Philippe Riviere. *Le Monde Diplomatique*

Infowar article from the *Ottawa Citizen*, by Bob Paquin. October 1998

Articles and Books

"Click here for revenge." A detailed account of the "Censure and Move On" campaign.

[6] Rivière, Philippe. "L'affrontement des mondialisations ?" *Le Monde Diplomatique.* November 1998.

http://www.seattleweekly.com/features/9903/features-bush.shtml.

"Electronic Town Square" by Martiga Lohn. *South West Journal*. December 2, 1998. This is a balanced survey of all the local e-mail lists and discussion in the Minneapolis area. It included a tip-of-the-hat to Steven Clift who has helped start several, and apologizes for the domination of the lists by white, liberal men. <www.wcco.com/community/swjournal/articles/nws/nws-981201162P750.html>.

Browning, Graeme et al. *Electronic Democracy: Using the Internet to Influence American Politics* Online 1996.

Hill, Kevin A. et al. *Cyberpolitics: Citizen Activism in the Age of the Internet (People, Passions, and Power)* Rowman & Littlefield. 1998.

Rash, Wayne Jr. *Politics on the Nets: Wiring the Political Process*. W H Freeman & Co. 1997.

Schuler, Doug. *New Community Networks.* Addison-Wesley 1996.

Schwartz, Ed. *Net Activism: How Citizens User the Internet.* O'Reilly. 1996.

Selnow, Gary W. *Electronic Whistle-Stops: The Impact of the Internet on American Politics* Praeger 1998.

Papers submitted for the National Center for Geographic Information and Analysis Specialist Meeting on "Empowerment, Marginalization, and Public Participation GIS http://www.ncgia.ucsb.edu/varenius/ppgis/papers/index.html."

Mr. Alain SERVANTIE
Head, International Regularory Aspect,
EUROPEAN COMMISSION (Belgium)

COM.5

Biographical profile

Name	Alain SERVANTIE
Date and place of birth	October 8, 1947, Bordeaux
Nationality	French
Marital status	Married, 2 children
Mailing Address	European Commission DG Information Society Avenue de Beaulieu 31- BU 31-4/26 B-1160- Brussels
Office Telephone	32 2 296 95 25
Office Fax	32 2 296 89 70
E-mail	alain.servantie@cec.eu.int

Academic Background

Postgraduate studies in Political Science, Faculty of Law, Bordeaux 1969-71

Licence of Sociology, Faculty of Litterature, Bordeaux, 1967-70

Licence of Law, Faculty of Law, Bordeaux 1964-69

Professional Carrier

Head of the Unit "International Regulatory Aspects of Communications Services", in the Directorate General Information Society of the European Commission, since June 1993, in charge of managing the international relations of the European Communities in the field of communications services.

1987-1992	*Private Assistant to Director General for Telecommunications, Information Industries and Innovation.*
1983-1987	*Administrator in the Intergovernmental Cooperation between the Member States Division, Secretariat-General of the European Commission.* [European Political Cooperation particularly with Eastern European Countries; relations with the Council of Europe; Desk for Berlin affairs].

1981-1983	*Desk Officer for Algeria, Tunisia, Libya, Egypt, Euro-Arab Dialogue,* Directorate of Relations with the Mediterranean Countries, Commission of the European Communities.
1975-1981	*Deputy Head of the EEC Information Office, Ankara* – Commmission of the European Communities.
1971-1974	Department of Relations with the Mediterranean Countries, Commission of the European Communities.

Main tasks exercised as head of unit for international relations in the field of Information Society and Telecommunications

Global Issues

G7 Summit on Information Society (1995); Pretoria Conference on Information Society and Development (*Communication of the Commission on Information Society and Development*).

Relations with the International Telecommunications Union (participation in the ITU Telecommunication Global Policy Forum on GMPCS and GATS, and other activities of this organisation).

GATS Negotiations on Telecommunications (concluded 1997, thanks through a dialogue with Telecom Operators); implementation of the GATS Telecom Agreement.

Relations with industries (equipment manufacturers and operators) on international issues (market access, standards, preparation of business round tables).

Preparation and management of the Information Society/Telecommunication part of the International Cooperation Scientific Programme of the 4th Framework Programme (40 million €, more than 100 projects).

Bilateral relations with countries or groups of countries

Launching of EU/US Dialogue on Information Society; launching of Telecom Activities in the Trans Atlantic Business Dialogue; similar dialogues with Russia, China, India.

Launching of Dialogues on Information Society/Telecommunications with MERCOSUR, Central American Countries, Arab Countries (Arab League).

Launching of specific cooperation programmes on telecommunications regulatory reforms and information society with Mediterranean countries, in the context of MEDA (about 50 million €).

Relations with Central and Eastern European Countries and other applicant countries (Cyprus, Malta, Turkey): preparation of enlargement, negotiations with those countries on telecom regulations and information society; industrial round tables on ICT with those countries.

Languages spoken

French (mother tongue),
English,
Turkish,
Italian,
Spanish,
knowledge of German.

Special Interests

Swimming, squash, tennis, reading, movies.

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Mr. Alejandro ALFONZO

Head of the UNESCO Regional Communication Office for Latin America and UNESCO Representative to Panama

COM.5

Brief Curriculum Vitae

1 Personal Data

Name	Alejandro Alfonzo
Place of birth	Caracas Venezuela
Nationality	Venezuelan
Civil Status	Married

2 University and post-graduate studies

Law	Faculty of Law, Central University of Venezuela – Caracas, 1964-1967
Journalism	Faculty of Humanities and Education, Catholic University "Andrés Bello" Journalism degree obtained in 1969.
Communication	Post-graduate studies, Department of Communication, Michigan State University – East Lansing, Michigan, U.S.A. (1971-1973) Master of Arts degree obtained in 1973.

3 Present post

Since 1998	Head of the UNESCO Regional Communication Office for Latin America and UNESCO Representative to Panama.

4 Some professional responsibilities performed

1983	President of the Board of Directors of C.A. Venezolana de Televisión (Venezeulan State TV company) – Caracas.
1990	Member of the Third Advising Committee of the Centre for the Development of Communications (CDT) of the International Telecommunications Union (ITU).
1991-June 1998	UNESCO Regional Communication Adviser for Latin America – Quito, Ecuador.

5 Teaching experience at university level

1973-1990 Teacher at the Catholic University "Andrés Bello", Social Communication School, Faculty of Humanities – Caracas, Venezuela.

6 Some articles and works published

Comunicación y Planificación. In **Comunicación y Desarrollo**. Published by the Institute for Latin America Latina (IPAL), Lima, 1987.

La Sociedad Civil, Comunicación y Calidad de Vida. UNESCO, Caracas, 1989.

Comunicación para la Educación y el Conocimiento. Bases del Ejercicio de la Ciudadanía. Paper presented to the International Seminar on Educational Technology in the Latin American Context. Latin American Institute of Educational Communication (ILCE), Mexico 1994.

Estudio en torno a los Obstáculos existentes para una Libre, Equilibrada y justa Circulación e Intercambio de Programas de Televisión: El Caso de América Latina. UNESCO, 1987.

La Comunicación: Factor Clave en el Proceso de Integración Latinoamericiana. In **Revista Universidad Verdad** No. 9, University of Azuay, Cuenca, 1992.

La Ciudad como Espacio de Comunicación. In **UPB-Comunicación**, Universidad Pontificia Bolivariana, Social Communication School, Medellin, 1995, pp. 7-14.

A la Ciudad para el Ciudadano por la Comunicación. In **Revista Diálogos de la Comunicación**, FELAFACS, Lima, March 1997, pp. 5-9.

Hacia un Sistema de Radiodifusión de Servicio Público. Book published together with José Manuel Pérez Tornero. Presidential Commission for State Reform (COPRE), UNDP and UNESCO, Caracas, 1998.

COM.6

Room C

Friday, 14 April 2000	16:00 – 17:00

COM.6	Forum Closing Session

Chairperson:

Mr. David MELLOR,
Cable & Wireless College (United Kingdom)

TELECOM Development Symposium Working Group Reports

Working Group A – Community Telecentres

Working Group B – Teleapplications

TDS Closing Remarks:

Mr. Hamadoun TOURÉ,
Director,
Telecommunication Development Bureau (ITU-BDT)

Forum Closing Address:

Mr. Roberto BLOIS,
Deputy Secretary-General
(ITU)

Mr. David Paul MELLOR
Director
International Affairs, Cable & Wireless College
(United Kingdom)

COM.6

C U R R I C U L U M V I T A E

Name	David Paul Mellor
Address	3 Seven Sisters Close Farthinghoe Brackley Northants NN13 5PN
Telephone	01295 710202
Date of Birth	7th December 1947
Status	Married (2 Children)
Education	LLM in IT and Telecommunications C & G Telecommunications Advanced Telephony & Digital Switching Techniques, MIMgt, FIEIE, I.Eng, MIPD Fellowship in Management & Training Development

Career History

12/1999-03/2000	*Director, International Scholarship Scheme C & W Plc*
11/1994-12/1999	*Director, International Relations C & W College*
12/1992-11/1994	*Director of Marketing C & W College*
4/1992-12/1992	*C & W Telecommunications College Head of Outstation Training*

Responsible for the management of all training in the United Kingdom carried out by C & W outside the Porthcurno campus (main supplier to Mercury Communications technical training).

11/1989-4/1992 *Mercury Personal Communications (wholly owned C & W Subsidiary) Head of Technical Field Operations*

- Developed initial operations strategy for a PCN.
- Developed a three year training scheme for PCN engineers encompassing NVQ assessment of all workplace activities in the second and third years.
- Represented MPC as a Director of the Mobile Radio Training Trust.
- Represented MPC as a member of the TVSC Steering Group.
- Project managed the development of a Network Management Facility.

3/1987-11/1989 *Band Three Radio Ltd, Basingstoke Hants, Operations Director*

A Phillips/Racal jointly funded business. As founder Director responsible for all aspects of technical planning (including negotiations with government departments), launch and implementation of a National Private Mobile Radio Network (valued at £25 million). Specific activity areas included:

- Obtaining acceptance (through DTI committees) of government standards to allow network to be manufactured.
- Sourcing radio sites and obtaining suitable frequencies from the DTI to allow coverage of 80% of the United Kingdom business population.
- Sourcing and purchasing power equipment to ensure no-break service in the event of power failure.
- Setting up a Control Centre to provide regular and accurate information to customers and end-users.
- Investigating mobile products and advising the DTI of their suitability for connection to the Band Three Radio Network.
- Recruitment and control of five management staff.

1974-1987 *Telephone Rentals plc, Bletchley,*

1986-1987 *Head of Translex Engineering*

In addition to managing the engineering functions of voice and data divisions of Telephone Rentals:

- Design input to product development (including digital networks and message handling).
- Recruitment and line management of two product managers.
- Liaison with Marketing Manager.
- Conducting an extensive market survey, investigating TR staff and customer attitudes to the company and its service. Producing a report and recommendations.

1982-1986 *Divisional Engineer*

Responsibilities included:

- Sourcing and evaluating product suppliers.
- Tendering/Commissioning of a major police network, including co-ordinating activities of software/hardware engineers from five suppliers to achieve a satisfactory working network over thirty stations.
- Design of conceptual high security electronic mail system incorporating PC's telephone extensions and telex.
- Development of a low cost message switching service including design collaboration with Olivetti and parts procurement.
- Recruitment, training and line management of eight product specialists.

1977-1982 *Special Applications Engineer*

- Providing a support/maintenance service for any new company product, which connected to a telephone line. Products included: Facsimile, Telewriting, Modems, Multiplexers.
- Training (Data and PABX) of all Area Engineers.
- Liaison with Phillips (Holland) on establishing a service back-up for message switching: subsequent involvement in commissioning and on going training of senior engineering staff.
- Recruitment and line management of two engineers.
- Assistance with establishment of the launch team for Telex, in competition with BT.

1974-1976 *Senior Engineer*

A trouble shooting role dealing on site with Plessey supplied electromechanical telephone exchanges.

- Development of call logging equipment.

1965-1974 *Plessey Telecommunications, Nottingham*

1974 *Accounts Manager*

Responsible for all aspects of the company's contract with Telephone Rentals plc.

1971-1974 *Training Officer*

Responsible for training TR and BT staff on all Plessey supplied telephone exchange equipment.

Part time (company sponsored) lecturing at local technical college.

1968-1971 *PABX Equipment Engineer*

1965-1968 *Student Apprentice*

Mr. Hamadoun Ibrahim TOURÉ
Director
Telecommunication Development Bureau (BDT)
(International Telecommunication Union)

COM.6

Biography

Mr. Hamadoun I. Touré, a citizen of the Republic of Mali, carries over 20 years of experience in the Telecommunications field and has had the opportunity to hold various management positions in leading Telecommunications companies.

His professional career covered the Public sector in his native Mali, the Intergovernmental institutions with INTELSAT in Washington D.C. and he also evolved in the Private sector with ICO Global Communications.

Hamadoun I. Touré holds a Master's Degree in Electrical Engineering from the Institute of Electronics and Telecommunications of St. Petersburg, Russia (1979).

His education also includes various courses in Management, Human Resource Development and Marketing.

1 Experience

At the moment of his election as Director of BDT, Hamadoun I. Touré was in the Private sector as, the Africa *Regional General Manager* for ICO Global Communications, a Global Mobile Personal Communication System (GMPCS).

Mr. Touré has been with ICO Global Communications from 4 July 1996 to January 1999 and was responsible for the company's regional operation and the marketing distribution networks across the African continent. He developed and managed the relationship with regional and national telecommunications, organisations, government departments and regulatory authorities and service distributors. He was also responsible for identifying and enhancing the business opportunities for the successful commercial implementation of the ICO services throughout the continent.

His main strategy has been a regional approach, which involves setting up Joint Ventures including Private and Public corporations from Cellular Network Operators to Public Telecommunication Corporations.

Mr. Touré has also been very active in pursuing all policy matters related to GMPCS implementation with the Regulators in all African countries.

Prior to ICO, Hamadoun I. Touré worked for INTELSAT (from 1985 to 1996), the International Telecommunications Satellite Organisation based in Washington DC, USA, where he served in several positions. First in the *Assistance and Development Program (IADP)*, managing regional assistance and development programs. During this time he has developed plans for the implementation of regional interconnectivity projects aimed at improving direct regional links and reducing external transits.

With INTELSAT, Mr. Touré was also subsequently *Regional Director Africa* and *Group Director Africa and the Middle East*. His activities included the conception and implementation of regional plans including Development strategies, technical implementation of new digital services, sales and marketing and training (regional and national).

As such he has spearheaded the conception of the INTELSAT's incremental regional approach for RASCOM, the Regional African Satellite Organisation. As *Regional Director and Group Director*, Hamadoun Touré has been closely involved in all ITU activities and has participated in ITU's regional and international forums.

Mr. Touré has started his career in 1979 with the Office des Postes et Télécommunications (OPT) du Mali (West Africa). The turning point was his management of the *International Telecommunications Division* at the time of the merger of the International and National sectors to form SOTELMA as an offshoot of OPT.

2 Languages

Fluent in French, English, Russian, Mandingo and Native Songhai.

Mr. Roberto BLOIS MONTES DE SOUZA
Deputy Secretary-General
(International Telecommunication Union)

COM.6

A GENERAL INFORMATION

Name	Roberto Blois Montes de Souza
Nationality	Brazilian
Date of birth	10 November, 1950
Place of birth	Rio de Janeiro, Brazil

B EDUCATION

1974	Electronics/Telecommunications Engineer University of Brasilia.

C PROFESSIONAL EXPERIENCE

From February 1999	Deputy Secretary-General, International Telecommunication Union (Geneva, Switzerland).
1994-1999	Executive Secretary of Inter-American Telecommunication Commission – CITEL of the Organization of American States – OAS.
1990-1994	Director of the Department of Private Telecommunication Services, Ministry of Communications of Brazil.
1987-1990	Director of the National Telecommunication Department, Ministry of Communications of Brazil.
1979-1987	Director of the Broadcasting Division of the National Telecommunications Department, Ministry of Communications of Brazil.
1974-1979	Engineer, Broadcasting Services Secretariat, Ministry of Communications of Brazil.

D OTHER ACTIVITIES

1991-1993	Representative of Brazil in the Permanent Executive Committee of the Inter-american Telecommunication Conference COM/CITEL (OAS).
1990-1993	Representative of Brazil in the Administrative Council of the International Telecommunication Union – ITU (UNO).

1987-1990	Member of the Administrative Council of the Telephone Company of São Paulo.
1990-1993	Chairman of the Administrative Council of the Telephone Company of Rio de Janeiro, São Paulo and Rio Grande do Sul, Brazil.
1975-1994	As Representative of Brazil, participated in various meetings of the International Telecommunications Union – ITU and Interamerican Telecommunication Commission – CITEL, having acted as head of the Brazilian Delegation on many occasions.

E OTHER INFORMATIONS

Lecturer in various national and international policy, planning and technical seminars/workshops. Some of these papers have been published.

Biography

Roberto Blois Montes de Souza has held the position of Deputy Secretary-General of the International Telecommunication Union since February 1999. From 1994-1999, Mr. Blois was the Executive Secretary of the Inter-American Telecommunication Commission (CITEL) of the Organization of American States (OAS). Prior to becoming the Executive Secretary of CITEL in 1994, Mr. Blois held several key positions in the Ministry of Communications in Brazil including Director of the National Telecommunication Department and Director of the Department of Private Telecommunication Services. Mr. Blois has served as Chairman of the Administrative Council of the Telephone Companies of Rio de Janeiro, São Paulo and Rio Grande do Sul in Brazil. He has headed numerous Brazilian Delegations to conferences and meetings of the International Telecommunication Union (ITU) and CITEL. Mr. Blois holds an Engineering Degree in Electronics and Telecommunications from the University of Brasilia.