THE INFORMATION REVOLUTION IN CHILE

OBSTACLES AND OPPORTUNITIES THROUGH THE INTERNET

Please take a minute to fill out our on-line survey (in spanish)

This is a collection of web pages part of the CS377c/LAS194 class homework

STANFORD UNIVERSITY 1999

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Gracias por haber contribuido al incremento del conocimiento del Internet en Chile. Esta encuesta no se trata de un estudio formal sino que es una manera de saber qu reas carecen de estudios y al mismo tiempo para que los acadmicos puedan entender mejor cmo avanza el Internet en todo el mundo.

1. ¿Tiene Ud. una computadora en casa?	2. ¿Cuál es su trabajo/ocupacion?
(•) Si ( ) No	Estudiante Otro - por favor describa: *Por ejemplo: sin empleo, amo/a de casa.*
3. Nivel de educación completada	**4. Sexo/género**
Basica	(•) Masculino ( ) Feminino
5. Edad	**6. Región**
<18	I
7. Ciudad	**8. Ingreso promedio mensual (pesos)**
	<200.000
9. Generalmente, ¿Ud. de dónde accesa la red informatica?	**10. ¿Cuál proveedor del servicio de Internet es el que utiliza Ud.?**
Hogar	CTC Otro - Nombre del proveedor:
11a. ¿Cuál es el uso más comú ;n del Internet para Ud.?	**11b. Por favor describa el porcentaje de tiempo dedicado a cada uso, ¿cuáles son sus sitios favoritos?, etc**
Entretenimiento	
12. Si Ud. ha hecho una compra (de un bien o servicio) en el Internet, ¿por qué lo ha hecho?	**13. Si nunca ha hecho una compra por Internet, ¿por qué no?**
No exista producto local/nacional	Securidad Otro - por favor explique:
14. ¿Cuántas horas se conecta Ud. al Internet cada semana? (horas)	**15. ¿Cuánto le cobran a Ud. por contratar al servicio y cuánto por uso mensual?**
0 - 1	Approx:

16. ¿Qué porcentaje del tiempo ocupa Ud. en sitios:	17. Cuándo compra Ud. algo por el Internet, lo hace a través de sitios:
Chilenos Otros sitios:	☐ Chilenos ☐ Latinoamericanos ☐ Europeos ☐ Norteamericanos Otros sitios:

Enviar encuesta Reajustar

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TECHNICAL CAPACITY

In less than ten years, the Chilean telecommunications sector has leap-frogged huge steps towards providing the nation with modern, fast and efficient means of communicating with each other and the rest of the world. Although Chile is not a *producer* of technology (insignificant number of scientists and engineers in R&D - *src: World Development Report 1999/2000*), it has shown an impressive technological growth by being a *user* of technology. Given the national infrastructure (see below) it would not be a surprise if it became a producer in the future.

CTC and Entel are the oldest and biggest players in the telecommunications industry. Before 1987, CTC had state-owned local phone monopoly, whereas Entel had state-owned long-distance monopoly. It wasn't long before the telecommunications sector deregulation begun (1987). CTC privatized in 1988 and Entel opened to competition in 1994, just after the national network became all digital in 1993 (*Economist Intelligence Unit, 1999*).

	Chile	Argentina	Brazil	Mexico
Phone lines/1000 people	180	191	107	96
Mobile phones/1000 people	28	56	28	18
PCs/1000 inhabitants	54.1	39.2	26.3	37.3
TV sets/1000 inhabitants	223	289	316	251
Internet hosts/10000 inhabitants	20.18	18.28	12.88	11.64
src: World Development Report 1999/2000				

Thus, it has gone from a nearly 100% state-run sector meeting minimal technology and service standards to one of the most active private telecom service markets in the world, with major investments in digital local and long-distance telephony, advanced cellular and wireless service, cable television and satelite. Furthermore, it is considered one of, if not the most competitive, market in Latin America partly due to the fact that it offers very few barriers to foreign investment/ownership (*Euromoney, December 1998*). The table on your left shows just how competitive Chile is compared to some of the most developed Latin American countries. It is second to Argentina in basic and mobile telephony, but dominates in the number of PCs and Internet hosts, two critical aspects of Internet development.

Internet users in 1998	430,000
Internet users in 1999(expected)	650,000
Expected growth	50%-60%
src: El Mercurio, 8/24/1999	

This exlosive growth in the telecommunications sector has facilated the growth of the Internet in Chile. Originating from the University of Chile, the Internet is currently expanding to every part of the country. The relatively high number of phone lines allows households in Chile to be connected to the Internet, thus providing a chance for the Internet to be used for recreation and ecommerce. This is enforced by the high percentage of PCs and TV sets, which could allow for the development of the WebTV market (Telefonica projects a 500% increase in this market for the year 2001). As a result, the Internet Service Provider (ISP) market is booming in Chile and more and more Portals are starting up. Mobile telephony also allows for remote access, providing an invaluable tool to professionals who work in remote parts of the country. The overall number of internet users follows a similar growth pattern.

The Larry press study attempts to measure the diffusion of the Internet in Latin American countries. Below we list the results of the study for Chile, as well as explain the relevant terms.

First of all, the study defines the Internet diffusion dimensions.

Dimension	Description
Pervasiveness	This is based on the number of hosts and users per capita.
Geographic Dispersion	Over 200 nations now have IP connectivity, but in many of these, access is restricted to one or two large cities. This dimension measures the concentration of the Internet within a nation, from none or a single city to nationwide availability with poi nts-of-presence or toll free access in all first-tier political subdivisions and pervasive rural access.
Sectoral Absorption	While widespread access is desirable, the payoff is in who uses the Internet in a nation. This dimension assesses the degree of Internet utilization in the education, commercial, health care, and public sectors. These sectors are seen as key to develop ment, and were suggested by the measures used by the United Nations Development Programme Human Development Index.
Connectivity Infrastructure	This measure is based on international and domestic backbone bandwidth, exchange points, and last-mile access methods. A highly rated nation will have high speed domestic and international backbone connectivity, public and bilateral exchange points, an d a high proportion of homes with last-mile access using CATV, DSL, or some other technology that is faster than analog modems.
Organizational Infrastructure	This dimension is based on state of the ISP industry and market conditions. A highly rated nation would have many ISPs and a high degree of openness and competition in both the ISP and telecommunication industries. It would also have collaborative organizations and arrangements like public exchanges, ISP industry associations, and emergency response teams.
Sophistication of Use	This variable ranks usage from conventional to highly sophisticated and driving innovation. A relatively conventional nation would be using the Internet as a straight forward substitute for other communication media like telephone and FAX, whereas in a more advanced nation, applications may result in significant changes in existing processes and practices and may even drive the invention of new technology.

Chile's results for the categories listed above were:

Nation	P	GD	SA	CI	OI	SU	Evaluator
Chile	3	2	2	2	3	2	Claudio Araya

Cuba	1	2	1	1	2	2	Marta Ruiz
Venezuela	2	3	1	1	3	2	Luis German Rodriguez
Peru	2	4	3	1	2	3	Jose Soriano

LOCAL TELEPHONY

Telefonica is the most dominant company in the local telephony market, currently holding 90% of the market.

- Telefonica (legal name Compania de Telecomunicaciones de Chile - CTC)
  - State run monopoly privatized in 1988
  - 44% owned by Telefonica de Espana
  - Diversified into every market segment since privitization
  - Cellular service now accounts for 10% revenue, started in 1989 - long distance started in 1994 (*src: Euromoney, December 1998*)
  - CTC's projections for 2001

Area	1998	2001
Basic phone line penetration	2.6 million (16.9%)	5.2 million (32.6%)
Mobile phone clients penetration	910,000 (6.5%)	2.3 million (14.7%)
International long distance (minutes)	300 million	600 million
Domestic long distance (minutes)	2.41 billion	6.58 billion
Cable TV	620,000	2.9 million

LONG-DISTANCE TELEPHONY

The main player with the biggest market share is Entel. Apart from that, there are 12 competitors, and users can access their networks by dialing 3-digit extension, called PCC, before calling. (*Financial Times, 8 October 1999*).

Entel - *src: Financial Times, 8 October 1999*

- Former state monopoly, opened to competition in 1994
- Dropped to 37% market share, still dominant player
- Investments by Telecom Italia and local group Chilquinta
- US$544 million in 1998

WIRELESS TELEPHONY

There are 960,000 mobile phone users in chile, constituting 6.5% penetration in this area in 1998 (*Wireless Week, 28 June 1999*).

The major players in this area are:

- Entel PCS
  - 185,000 customers in 1998
  - 75% owned by Entel, 25% owned by Motorola
- BellSouth
  - 200,000 customers in 1998
- CTC Startel
  - 555,000 customers in 1998
  - 100% owned by CTC
- ChileSat PCS
  - 28,000 customers in 1998 (*started operations in September 1998*)
  - 100% owned by Leap Wireless International of San Diego, CA., purchased in April 1999 for US$50 million. *(Financial Times, 8 October 1999*)
- Ericsson

CABLE TV

Cable TV is a growing market in Chile. There are currently 1 million cable TV customers (*LatinFinance, September 1999*) and this number is expected to grow even more over the next few years.

Cable TV offers the possibility of a connection to the Internet without a PC. This technology is called WebTV and it involves the transfer of information directly to a TV instead of a typical PC. The cost involved in this case is significantly lower ($90 for a cable modem - BellSouth, whereas a typical PC with modem costs around $600) for WebTV and the sustained bandwidth (the number of bits transfered/sec) is orders of magnitude higher. In the US, there have been problems with this technology, mainly because the cable network was old and could not sufficiently support two-way communication of information. With Chile this is bound to be easier, since the cable network is very new.

Telefonica's cable TV customers were 280,570 in 1998, an increase of 9.4% from 1997.

E-commerce

E-commerce is at its infantry stage in Chile (US$6 million in 1998), however most analysts predict that it will grow exponentially over the next years.

Currently, its predominant use is for business-to-business transactions, demonstrated in the following excerpt from BusinessWeek magazine:

"One Latin company using the Internet to compete globally is Chile's state-owned Codelco, the world's largest copper producer. At the company's Web site, a Tokyo client can track a copper shipment as it moves from port to port. An explosives manufacturer can bid on an upcoming project, or a vendor can check the status of an invoice. According to sources at Codelco, traffic on the site is growing by 70% each month. Analysts estimate that this type of business to business activity accounts for between 70% and 80% of e-commerce in the region."

(Business Week Online, 25 October 1999)

However, retail business is starting to grow, with noteable examples like the following:

- Intershop: an on-line mall.
- Infoland BLR: an on-line technology store.
- Openmarket: an on-line shopping portal.

ISPs

The ISP market is estimated between US$30 and $35 million (*El Mercurio, 19 January 1999*). Most ISPs provide all popular services modern industrialised countries are accustomed to, like:

- E-mail
- Personal web-pages
- Dial-up accounts
- FTP access
- Virtual web hosting (more business oriented)

The average ISP charge/month is US$20-25. The associated phone fee amounts to US$70/month, thus totalling around US$100/month, a cost which constitutes a barrier to widespread use.

Some of the major players in this market are:

- Entel
  - 43.7% of home market (Universidad de Chile Study)
- Telefonica
  - 57.3% of university market (Universidad de Chile Study)
  - 40.6% of business market (Universidad de Chile Study)
- BellSouth
- IFX (Unete)
  - Miami, FL based
  - Acquired Interaccess, Intermedia, and Interaccess.
  - Minority stake in Yupi.com (Worldwide Telecom, October 1999)
- FirstCom
  - Acquired RDS Internet in April 1999
  - Primarily a provider to coroporate clients (*El Diario, 15 July 1999*)

For a complete listing of all ISPs in Chile, click here.

Portals

Like many other sectors in modern Chile, the trend here is to have various players which consolidate together over periods of time to get an edge over competition.

The major players here are:

- La Brujula
  - Consolidated ChileNet and NetAlta.
- Starmedia
  - Acquired SIL Servicios Interactivos, July 1999.
  - OpenChile (*aquired by Starmedia in 1999*)
  - Panoramas (*aquired by Starmedia in 1999 - El Diario, 15 July 1999*)
- Yupi.com
  - minority stake owned by IFX. (*El Diario, 15 July 1999*)

Regional portals with Chile-specific content:

- Yahoo!
- ¡Ole!
- Unete
  - Consolidated interaccess.cl and interactivo.cl

For a complete listing of portals in Chile, click here.

LABOR MARKETS

Labor Force

The 5.4 million strong Chilean work force is highly literate, motivated, disciplined and accustomed to competing in a free market environment. Foreign study and travel is stressed among the managerial class, and knowing two or three languages is not unusual among young workers motivated to move up in the international trade arena. Many professionals hold advanced degrees from European and North American universities, and those who study in Chile are often in coursework for two to three years longer than their counterparts abroad, even for those earning technical degrees. As a result, most are ready to assume positions of responsibility quickly upon graduation.

Although ahead of Latin America and most of the emerging markets, Chile ranks in the middle of countries in terms of GDP per employee. Yet Chilean labor remains inexpensive compared to industrialized nations and interest in training and self-improvement is ingrained in the society. There are tax benefits for voluntary training, favorable loan educational loan programs and Chileans can now choose from dozens of autonomous private technical institutes and universities, in addition to its traditional state university programs.[1]

Despite a middle ranking in overall GDP per employed worker, Chile did show impressive improvement, moving up by more than 5% on average in 1997 and 1998, while demonstrating the fifth-best improvement among countries surveyed. Partly as a result of this, many economists and world organizations that measure economic potential state that Chile is on track to continue with long term growth of between 6.5% and 7%.[2]

The government, having privatized huge sectors of the once-powerful state economy, has recently begun to focus on real education reform. Although Chilean educational standards are among the best in the region, providing youth with the tools to succeed has become a major goal of the state. Corporations, too, are beginning to accept the necessity of financing training for employees to make them more capable competitors in the open world economy.

Labor unions in Chile have been decreasing in importance since their heyday in the 1960s and 1970s, concentrating mostly in mining and some public employee sectors. Any group of 25 or more workers can form a union and negotiate wages, but the rapid growth of the economy has fostered a strong sense of self-reliance in the private economy. Since most workers are in smaller companies and have remained fairly mobile in the job market, unions have a diminished role in Chile. One exception is among teachers and some public servants, where reduction in government spending in accord with international monetary demands has put pressure on salaries.

Beyond that, most strike actions focus on the mining sector, where the occasional short, legal strike is part of the bargaining culture and rarely leads to significant interruptions. Strikers also understand that extended work stoppages can result in their legal replacement, so most actions are symbolic in nature, taking the form of delays or sit-downs rather than bitter standoffs between workers and management. A recent general poll of management attitudes did not even touch on the subject of labor unrest. Strategic

industries and city workers cannot strike by law. [3] Chileans work 48 hours a week on a schedule agreed upon by the employer and employee. Overtime pay is 50% in addition to the normal rate.

Unemployment and Wages

Although Chile has been an economic darling for most of this decade, the national unemployment rate has been steadily increasing since 1996. According to INE, the Chilean Institute of Statistics, the jobless rate, for the June-August quarter of 1999 was 11.5%, versus a rate of 6.8% for the same period one year earlier. This marks 18 consecutive months of increasing unemployment. This trend is even more pervasive for the younger members of the population. For those between 20-24 years of age, unemployment is hovering at 22.9%. According to experts, this situation is not likely to reverse until next year or early 2001.[4]

In conjunction with negative employment figures, wage increases continue to slow. Nominal wages increased by 5.6% in August 1999 compared with the previous year, while real wages for the same period increased by 2.3%. Rising unemployment, low inflation and the current economic recession has nearly eliminated wage pressures in the economy. According to the INE, the average monthly wage was 224,039 Chilean pesos (US$456) in March 1999.

The government announced a program in June 1999 to provide incentives for job creation due to concerns over rising unemployment. According to the President of the Confederation of Production and Commerce, this plan could create up to 150,000 new jobs in the second half of this year. This compares with a total of 664,750 unemployed as of the current June-August period. The sectors adding jobs include retail, financial services and transport and communications. However, these new positions are insufficient to offset the large reductions in employment in construction, manufacturing, agriculture, fishing and mining.

Income Distribution

Trends point to a slight increase in income inequality in Chile, with the richest fifth of the country receiving 57.3% of total national income in 1998, up from 57.1% in 1996. The poorest fifth received 3.7% in 1998, compared with 3.9% two years earlier. The ratio of the share of national income between the richest fifth and poorest fifth of the country was 15.5 last year, compared with 14.6 in 1998. However, it should be noted that income inequality in Chile is less striking that in other Latin American nations, like Brazil and Mexico.

Occupational Skils

Importantly, the Ministry of Economy of Chile has developed Program of Technological Innovation (PIT) for the 1996-2000 period. The purposes of this program are several:

- Substantially increase the role of private companies in basic and advanced technological innovation

- Orient research and development toward innovation
- Strengthen the national technological infrastructure
- Support the modernization of public institutions
- Develop instruments to increase the role of the financial system in the process of innovation, through industries such as venture capital encourage the formation of high quality human resources such as scientists, researchers, engineers, professionals and qualified workers
- Develop an information infrastructure with national coverage

As the chart below indicates, these policies may be responsible for the significant increase in number advanced graduates and trained workers entering the national work force.

HUMAN RESOURCES IN THE IT SECTOR IN CHILE[5]

	1992	1993	1994	1995	1996	1997	1998	Annual Growth Rate (%)
No. of Engineers Graduated per year	2390	2502	3263	2783	3363	3923	n.d.	10.4
No. of Advanced Degree Graduates per year	359	411	464	492	642	705	n.d.	14.5
Number of trained workers	322,029	361,132	421,875	438,240	482,303	512,531	n.d.	9.7
No. of Research Scientists and Engineers	5860	6028	6233	6288	6619	6807	n.d.	3.0
(per 1000 members of labor force)	1.13	1.10	1.12	1.15	1.18	1.20	n.d.	-

Graduate degrees include both Masters and Doctorate degrees.

Science and Technology Capacity plus basic and applied research		**Human Resources** Workforce availability and qualifications	
Best in the World		Best in the World	
USA	1	Singapore	1
Chile's Ranking		Chile's Ranking	
Chile	34	**Chile**	32
Next in Latin America		Next in Latin America	
Brazil	36	Argentina	36

Source: 1998 World Economic Forum - World Competitiveness Report

[1] SOFOFA (Federation of Chilean Industry)
[2] World Economic Forum

[3] SOFOFA
[4] Chilean Industrial Development Corporation (SOFOFA)
[5] Anuario del Consejo de Rectores (does not incorporate every Chilean University, nor engineers graduated from the Armed Forces.); SENCE; Conicyt.

EDUCATIONAL OPPORTUNITIES

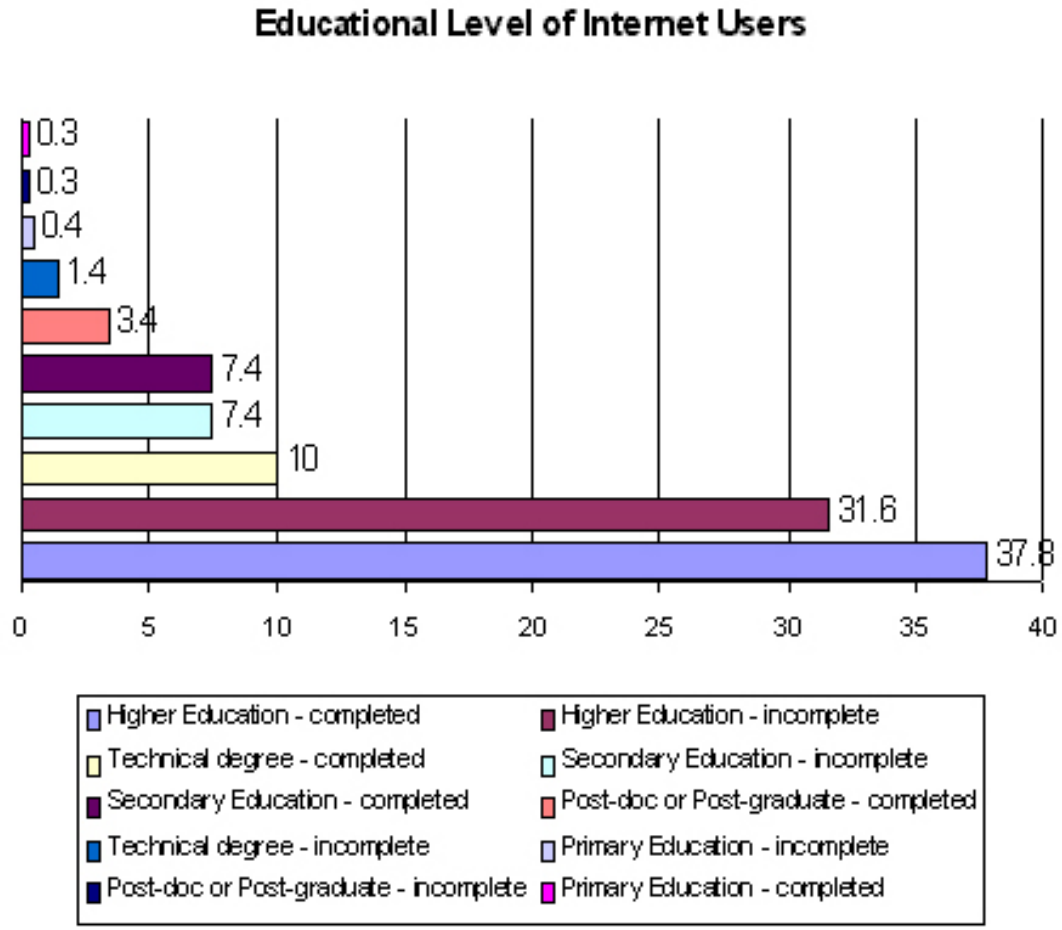
Brief Overview

Historically, among Latin American Countries, Chile has always stood out as a country dedicated to the education of its people. The democratization of access to education reached its pinnacle in the 60s but was clearly biased by a focus on higher education, politicization of educational institutions, and unsustainable levels of expenditure. The military government of Pinochet (1973-1989) greatly altered the public/private composition of the educational institutions, and curtailed the expenditures to a detrimental level, limiting both academic and organizational options (e.g. pure research institutions, social science institutes, etc.).

Currently, with help from the World Bank (WB) and the Interamerican Development Bank (BID), Chile is attempting to increase the equity of their educational system from primary through higher education. They are attempting to follow the guidelines actively promoted by the WB: 1) differentiation of institutions in public and private sectors; 2) link funding to performance (on national examinations); 3) redefine the role of the government in higher education; and 4) implement policies that will increase equity and quality of education. The following sections will elaborate on the form these policies are taking, on their effectiveness, and then offer a summary of the primary obstacles to the Internet in education and some recommendations for overcoming these barriers.

Important Statistics

- Literacy rate (Source: División de Planificación y Presupuesto, y División de Educación General, taken from the Ministry's web page at http://www.mineduc.cl/estadisticas/tablas/1.htm): 93.7% in 1990; 95.4% in 1998
- Total number of schools: 10,621 (5,841 Urban and 4,780 rural), 2,415 in Metropolitan Region
- Historical Coverage of Schooling (1970-present): http://www.mineduc.cl/estadisticas/tablas/3.htm
- Average number of years of schooling: 9.93 overall, 9.58 men, and 10.63 women
- Number of Education Projects by region and with total monetary investments shows a clear bias towards the MR but not disproportionate to population
- Comparison of offerings at the three major universities (See Table A)
- Level of technological penetration, compared to other countries (See Table B)
- Level of education expenditures (See Table C)
- Educational level of Internet users



Primary and Secondary Education

The top three benefits cited for the inclusion of technology in education are the increased motivation inspired in students, the effects of expanding the discussion spaces outside of the classroom, and better preparation for the workplace. Though no study has been done specifically on Chile with regards, it is likely that, as a developing country, the latter takes on slightly more importance than it would in a developed nation. In spite of these three benefits of technology, it is unclear at this point how effective technology actually is in improving the educational experience (*See Vaibhavi Gala, Computers for Instruction: What Inhibits Greater Use?, Monograph in International and Comparative Education, School of Education, Stanford University, August 1999. For more on technology and education, see bibliography).*

The Ministry of Education (Mineduc) has implemented an Educational Reform that began officially in 1996, involving changes in curriculum, opportunities for the professional development of teachers, and a broadening of the educational opportunities available to Chileans. This has been focused primarily on primary and secondary education. For evaluating school performance, they utilize a national testing system (Sistema de Medición de la Calidad de la Educación, SIMCE) that has been in place since 1980. The Brunner Commission, which was responsible for 30 recommendations made to the government in 1994 for improving the educational system, recently reconvened to affirm that the improvements are being made to better Chilean Education before the year 2000. Among those they cited as most important was the extension of the computer web "Enlaces" to over 2 million students. [1]

The Enlaces program (El Proyecto Enlaces) deserves attention, as it is the best example of a coherent, long-term, public-private venture aimed at increasing the availability of computers and the Internet to students in basic

education. Started in 1992 as a pilot program in 12 schools within Santiago, it now includes more than 4200 elementary and secondary school and expects to include more than 90% of the Chilean school-age population by the year 2000 [2]. The details of the program show that "participating" in Enlaces does not mean that the *students* will come into contact with the Internet. This challenges the goal of utilizing the Internet in education as a means of preparing students with basic work skills or motivating their interest in education or technology.

Rather, the primary focus of the program is to create a "virtual training ground" for teachers. The rationale for this is that the first advantage provided to education is for shared learning among teachers and integration of national curriculum, which has been shown to be an important barrier to successful use of technology in the classroom (*See Gala, p.32-38*). CTC nonetheless boasts that part of the Education 2000 program is to have personal e-mail accounts for all teachers and students in over 6,500 schools over the next 2 years. Whether this is feasible is not clear, whether this will help schools that possess only one computer located in the teachers room, is highly debatable. Another aspect to CTC's involvement that is very important is that they are providing free Internet connections, a free computer, and free technical assistance (the browser provided is Internet Explorer 3.02).

Nevertheless, merely the effort and awareness that this program exhibits is a positive statement of the importance given to incorporation and, more importantly, utilization of technology in basic education. Beyond the functioning of the Enlaces "university" for teachers, Mineduc also has organized scholarships for professional training of teachers in mathematics and science. In addition, the Third Annual Regional Conference of teachers in computer science and related fields is coming up this November and is a form where, once again, teachers can share important information about how technology mandates organizational changes, pedagogical changes, and changes in the opportunities of subject matter. For the accomplishments and foresight of this project, Enlaces received the Apple Innovative Scholar Award which allows one of the technical coordinators to attend a training program at Apple's Research and Development complex in Cupertino, California. [3]

Higher Education

It is clear that within Chile, the interest in technology among the middle and upper classes is relatively high. The fact that the Computer Science Department of the Catholic University was founded in 1983, one year prior to the Computer Science Department of Stanford University, is a significant indicator of this awareness of technology's place in society. Unfortunately, Chile has been relatively incapable of developing internal high-technology research and development links between its public sector, government, and higher educational institutions. Looking at Table B, Chile sits relatively well within the framework of Latin America in terms of high-tech exports, but still lags the developed world substantially.

If we look at the curriculum in the major universities, we see an interesting divergence between the major public and private universities. Whereas the University of Chile, the only public university examined and by far the largest university in Chile, offers relatively little in terms of undergraduate curriculum in computer science or related fields, the private universities offer 2 and three times as many degrees at this level. Nonetheless, the graduate offerings are greater and the number of professors and resources available at the U. Chile are still greater. Overall, one notes a preprofessional orientation; many of the majors noted here are not directly computer science education, they are most often part of the engineering curriculum, and often subcategories of civil or industrial engineering degrees. For a developing nation, this may not be a bad emphasis as there is a goal to include Chilean engineers and scientists in the process of helping Chilean entrepreneurs. Yet, at this point, we have yet to see a Silicon Valley explode alongside the rich wine of the Central Valley of Chile.

There are many technical institutes, but an informal search of them on the web revealed that they do not offer too much in the areas of technical computer training and are still generally focused on word-processing skills at the most.

Table A: Comparing Three Major Higher Education Institutions

	Undergraduate majors in related fields*	Graduate offering in related fields*	# of professors on Faculty in related fields*	Comments
The Catholic University	4	5	12	Has a strong emphasis on the use of computers with details on their web page about technological infrastructure in the school
University of Chile	2	4	10	Though created in 1983, one year prior to the CS department at Stanford, the undergraduate offerings are lacking and the preprofessional orientation is strong.
Universidad Mayor	6	2 (special courses for professionals seeking further education)	3	Only has two departments, one of which is dedicated to economics and one to engineering, the latter being predominately oriented towards computers and telecommunications training.

Source: Independent analysis utilizing each school's web page.

* Related fields includes electrical engineering and civil engineering of telecommunications systems.

Table B: Comparison of technological penetration with other Latin American Countries and the US

	TVs Per 1000 people (1997)	Telephone main lines per 1000 (1997)	Mobile phones per 1000 (1997)	PCs per 1000 (1997)	Inet hosts per 10,000 (January 1999)	Scientists and engineers in R&D per million (1985-1995)	High-tech exports as % of mfg. Exports (1997)	# of patents filed (1996) residents / non-residents	
Venezuela	172	116	46	36.6	3.37	208	10	182	1,822
Chile	233	180	28	54.1	20.18	**	19	189	1,771
Mexico	251	96	18	37.3	11.64	213	33	389	30,305
Brazil	316	107	28	26.3	12.88	168	18	2,655	29,451
Argentina	289	191	56	39.2	18.28	671	15	**	**

United States	847	644	206	406.7	1,131.52	3,732	44	111,883	111,536

Source: World Development Report 1999/2000, all data per given number of habitants

Table C: Comparison of Education Spending with that of other Latin American Countries:

	Public Expenditure on Education as % of GNP		**Net enrollment ratio** % of relevant age group				**Education* Spending** % of total spending
			Primary		**Secondary**		
	1980	1996	1980	1996	1980	1996	
Chile	4.6	3.1	**	88	**	58	14
Brazil	3.6	5.5	80	90	14	20	N/A
Argentina	2.7	3.5	**	**	**	**	15

Source: World Development Report, 1999/2000

* Data taken from Human Development Report (UN) as reported on http://businesschile.com/indicators/images/pg69b_hi.gif

ACCESS OF OPPORTUNITY

While Internet access in Chile is fairly widespread by Latin American standards, the 430,000 users in1998 represented just 3% of the national population. El Mercurio estimates a 50-60% increase in users to roughly 650,000 by the end of 1999, (*El Mercurio*, 24 August 1999) but these users will continue to share the same profile as other early adopters. Data from a Universidad de Chile study shows that the overwhelming bulk of Internet users are young, male and university educated.

Most users report that the workplace (39.8%) is their main access point, with dial-up home users (32.7%) not far behind. Schools and Universities provide access for 19.3% of respondents. (*Universidad de Chile Study*, 1999) A small percentage of people use public facilities (libraries, internet cafes) for access.

Chilean users split their time fairly evenly among entertainment, work related, and academic pursuits while on the web. (*Universidad de Chile Study*, 1999) Numerous local and regional portals provide access to a wide variety of local content.

Ecommerce remains a fairly scarce phenomenon in Chile. In 1998, total online transactions only amounted to US$6,000,000. (*El Mercurio*, 24 August 1999) Only 2.5% of respondents to the Universidad de Chile study cited ecommerce as their main use of the internet. While numerous experts predict exponential growth in both retail and business-to-business sectors, numerous factors including consumer concerns about security, poor parcel shipping services, and lack of necessary credit card transaction clearing services will hamper growth.

Entel	$10,000/month
CTC	$9,900/month
BellSouth	$12,000/month

The cost of connecting to the internet remains a key barrier to more widespread use. While ISP costs are roughly the same as that of the United States (roughly US$20/month), a whopping 70% of dial-up cost is per minute local telephone costs. (*El Mercurio*, 19 January 1999) Thus, users may end up spending roughly US$100 per month for regular access. Though PC costs have continually dropped in recent years, the expense is still outside the realm of possibility for a great many Chileans. Various access packages available from all providers. From Email only to limited monthy access to unrestricted monthly access. Unlimited use is benchmark for comparison in table above.

Location

- Home
  - 25% of Households have access (*El Mercurio*, 21 July 1999)
  - Dial-up connections most prevalent (*LatinFinance*, September 1999 [1])
  - Cable providers, currently with 1 million customers, are allowed to provide Internet access, so growth is expected. (*LatinFinance*, September 1999 [2])
- Workplace
  - 89% of Large Corporations have access. (El Mercurio, 21 July 1999)
  - 60% of all Businesses have access. (Universidad de Chile Study)
  - Leased lines favored, 100 large and multinational corporations in 1998, expected to grow to 40,000 in 2005 (LatinFinance, September 1999 [1])

- 40% of Businesses have web sites (Universidad de Chile Study)

- Schools / Universities
  - 19.3% of respondents get access through school or university (Universidad de Chile Study)
  - CTC and government initiative under way to provide internet access to all primary and secondary schools.
- Public
  - CyberCafes. Sample listing in selected cities:
    - Austral Cybercafe (Puntas Arenas) - $2500/hr
    - CyberCenter (Santiago) - $3600/hr
    - Centro Internet Libertad 7 (Valdivia) - $2200/hr

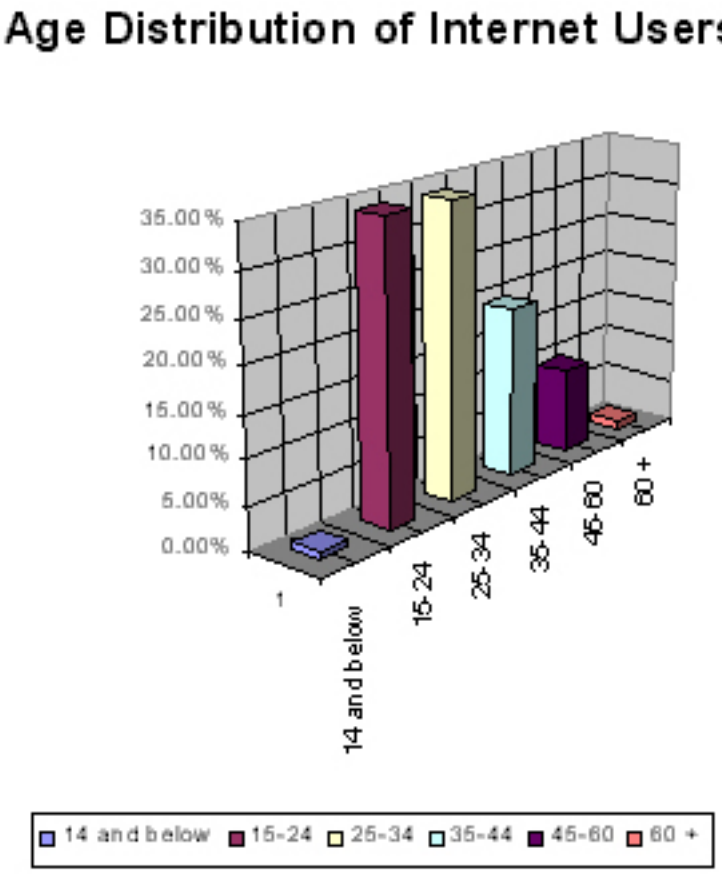
Primary Access Location

Work	39.8%
Home	32.7%
School/University	19.3%
Other (extrapolated)	8.2%
Universidad de Chile Study	

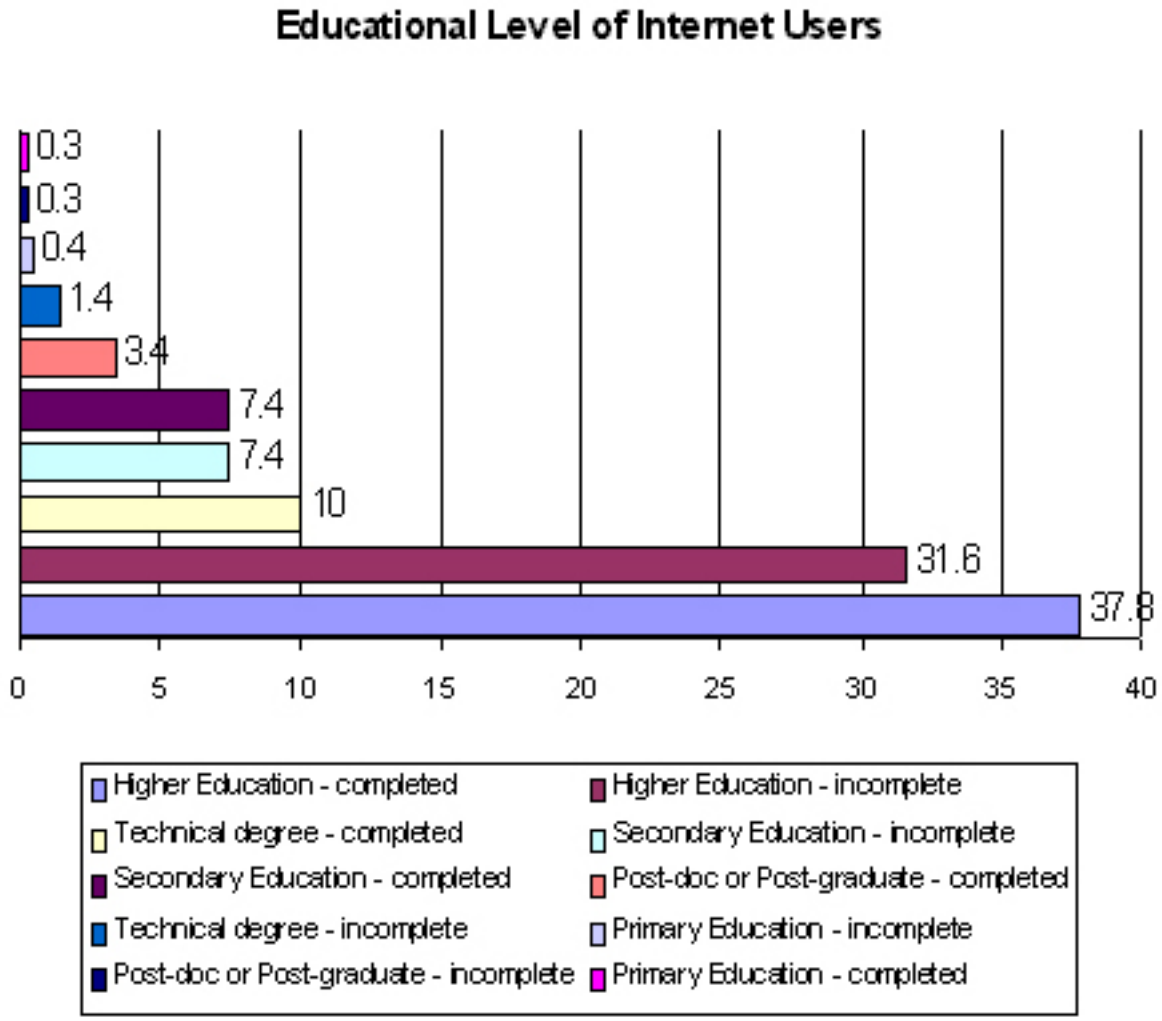
Gender

Male	64%
Female	36%

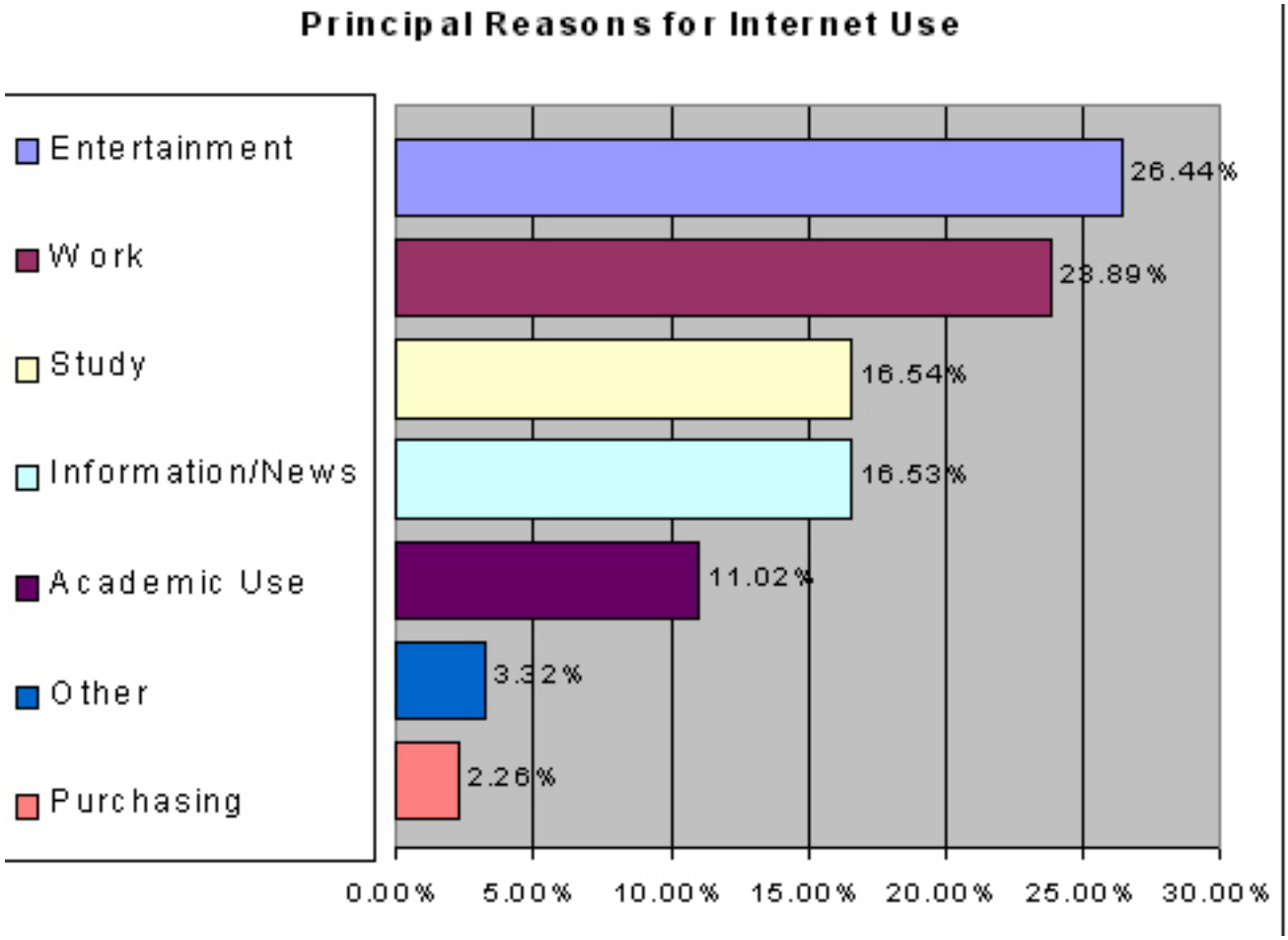
Age



Educational Level



Principal reasons for Internet use


Principal Reasons for Internet Use
Entertainment
Work
Study
Information/News
Academic Use
Other
Purchasing
26.44%
23.89%
16.54%
16.53%
11.02%
3.32%
2.26%
0.00%
5.00%
10.00%
15.00%
20.00%
25.00%
30.00%

THE CHILEAN GOVERNMENT'S ROLE: THE REGULATORY FRAMEWORK

Introduction: IT is on the agenda

With the Asian crisis depressing international demand for its primary product exports, with every cent stripped from the price of copper causing a loss of $80 million in trade and $32 million in positive fiscal balance, and with the Samba effect shaking to the very core the confidence of investors in the region, 1998 was not a great year for Chile. Unemployment almost doubled from its mid-1997 levels and even their revered former dictator's status was being called into question by an ironically different sort of international demand that was, unfortunately, on the rise. Amidst all the bad news, Chile's government was diligently trying to carryout second-phase economic reforms, expanding the government's proactive role in promoting incorporation of technology into productive processes and deepening a nationwide educational reform. Enlaces, an educational program designed to link all Chilean primary and secondary schools to the web, performed so well as to gain a big boost from the private sector when CTC cooperated in a huge financing plan. As the apparent success of this educational program suggests, Chile's leaders have been well aware of her shortcomings with regards to the use of technology at all levels of society and have been advancing reforms across all sectors. With this goal in mind, in mid-1998, they formed a Presidential Commission on New Communication and Information Technologies to look into the issue in more depth.

In January of this year, after seven months of research and analysis, a 105-page report was submitted to the President of Chile by Jorge Leiva Lavalle, the Minister of the Economy and the President of the Commission. This report offered four main criticisms of the development of information technology (IT) in Chile, noting the haphazard arrival of different State functions on-line, reluctant entrepreneurs and a traditional business culture, severely lacking regulatory frameworks, and a highly unequal territorial and social distribution of the current technological infrastructure. To combat all of these, the Commission felt that the State ought to focus on the following:

- Furthering the use of technology in education with REUNA2 and Enlaces
- Creating new legislation necessitated by the imperatives of incorporating technology and new organizational forms into society

- Improving how the current trade, antitrust, and investment policies aid or inhibit the expansion of IT in Chile.

As previous sections have examined the educational reforms and their use of technology, this section will focus primarily on the different areas of legislation, what their current state is with regards to IT, and new laws that are being adapted.

Trade Incentives

Chile is one of the most open countries of Latin America, using a flat 11% import duty for all countries and currently moving towards duty-free transactions by 2000 with Mexico, Canada, Mercosur, Colombia, Venezuela, and Ecuador. It was very near becoming the fourth member of NAFTA which would have greatly facilitated its purchase of technologies from the US market, but nevertheless has signed an Information Technology Agreement that allows it to import computers duty-free. In another effort to increase the use of more advanced technology in value-added industry, they have a system of duty drawbacks for importation of capital to be used in the production of exports. The value-added tax (VAT) is utilized as their primary source of national revenue (40%). It was almost reduced in 1997 but instead was maintained at a level of 18% to finance the educational reforms.

Investment Incentives [1]

In an effort to compensate for the shortages consequent of being a relatively small nation, Chile is very receptive to investment from international sources. In addition, Chile is wise in its investment controls. Chile's Decreto Ley 600 is the primary legislation governing investment policies, and it can be argued that the law provides equal if not better protection for foreign investors. It allows for immediate repatriation of profits though capital cannot be touched for a year. Investors may choose between a 42% flat rate for ten years or national rate of 35% that is subject to fluctuation. For larger projects (greater than $50 million), the flat rate can be lower.

Nevertheless, they do make an effort to keep an eye on speculative flows and financial capital flows that they see as not contributing to the productive capacity of the country nor to its technological base. All such investments are made to deposit 30% of the capital in a non-interest bearing "encaje" in the Central Bank. They also were lauded for their use of a 1.2% tax on financial loans that slowed the rate of short-term investment during 1993-97, preventing them from being as hurt by the currency crises in Mexico and Asia. Currently, due to shortages of capital, this law has been repealed. In services, full foreign ownership is allowed though the "principal" officers of any television or radio station must be Chilean. As an example of their dramatically more open economy relative to earlier in their history, early in the 90s, they sold the historically State university-run television station to a Mexican multinational. Though some local content has been sacrificed for better production quality, domestically produced programs still dominate the market. [2]

Other potentially important developments can be noted. Chile signed the Convention on Combating Bribery on November 21, 1997, to prevent the gaining of unfair business advantages by foreign business

people. Also, in an effort to distribute more evenly the benefits of investment in technology, there are incentives to invest in the extreme North and South of the country. In general, the private sector in Chile, when given legislative incentives, has been a key partner for the public sector in improving the technological infrastructure of the country. CTC's involvement in Enlaces in particularly noteworthy though, for future development, the program does find itself searching for currently sparse local investment.

Antitrust

In the Report by the Commission on New Communication and Information Technologies, one of the key problems confronting effective regulation of the IT sector is the size and scope of CTC. Since they own the network that all other service providers use, customers bear the burden of paying the cost for the company to utilize CTC's lines as well as the service charge. The government is well aware of the problems that can be created by monopolies. For example, in 1992, *Telefónica de España* was forced to divest controlling shares in local and long distance companies. Decreto Ley 311 has been effectively enforced but may not be an adequate measure to control CTC or other potential multinational monopolies in software and hardware markets.

Intellectual Property and Patent Law

The first law pertaining to intellectual property was dictated in 1834 and lasted until 1925, when the National Library was asked to create a national registry for intellectual property. In 1970, Decreto Ley 17.336 was passed, calling for the formation of the Department of Intellectual Property that is part of the National Library, Archive, and Museum system and directed by a "conservator-lawyer"[3]. Chile is now party to most international conventions, including the Berne Convention and the TRIPS agreement. It is a member of the World Intellectual Property Organization (WIPO) and signed the UN Convention on Contracts for Sale of International Goods (CISG) in 1998. With regards to IT, the law has a specific clause mentioning computer programs (Article 8). The government has welcomed enforcement efforts.

Chile enacted an Industrial Patent Law in 1991 that has improved protection to 15 years from the date of grant, but is not at international norms. Software piracy is a problem, but has improved substantially relative to most Latin American countries, dropping from 90% in the mid-80s to 65-70% in 1997. Industry reps still argue that penalties are too low relative to potential pay-off. However, in terms of enforcement, Chile is relatively small and easier to monitor with a very efficient and respected police force. In terms of patent protection, as of 1998, Chile was on the US Trade Representatives Special 301 watch list for faulty protection. They also have no specific statue defending semi-conductor design nor are commercial or financial design protected by the current patent laws. It can be reiterated that, in various cases, enforcement has been successful, such as in efforts to stop the buying of foreign trademarks by local producers for later resale when the affected companies moved into Chilean markets.

New and Future Laws

Though Chile seems to be lacking in some ways in terms of patent protection, the government shows clear signs of remedying the situation and has already made advancements on other fronts. Most impressive, in June of this year, they passed a law approving the use of electronic documents and digital signatures for legal and economic transactions. This should create the necessary legal framework to assure business that electronic business is safe. Customers in Chile will need similar assurance with legislation regarding credit card transactions, though these are not currently well protected. On general infrastructure issues, the Chilean House of Representatives proposed only two months ago a law to regulate the development of the Internet. It can be assured that the government of Chile will take the necessary steps to foment the expansion of the Internet [4] in Chile; their efforts, however, will be contingent on congruent initiatives by the private sector and NGOs.

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[1] Data for the sections on trade, investment, antitrust, and intellectual property law were obtained from this page, a Department of State Report, submitted to the Senate Committees on Foreign Relations and on Finance and to the House Committees on Foreign Affairs and on Ways and Means, January 1998, and from the section on the Regulatory Environment in Chile at http://journal.chilnet.cl.

[2] The article cited (Powell, Adam Clayton III. Internet research in Chile showcased at technology conference. The Freedom Forum Online. October 7, 1999) is linked to our web page on the Bulletin Board.

[3] The complete text can be found at http://www.congreso.cl/biblioteca/ following the link to "Otras Leyes" and looking up the number of the law on "Propiedad Intelectual".

[4] This can be examined in more detail at http://websil.congreso.cl/scripts_publico/proyecto.idc.

SOURCES OF FINANCING

Investing Environment

Chile, more than most other Latin American countries, has provided a transparent and stable legal and economic environment to attract foreign investment. While many other nations have placed significant restrictions on foreign direct investment (FDI), Chile realized that providing foreign firms with fair, non-discriminatory rules was the best method to encourage investment in growing the productive capacity of the country. As a result, FDI comprises approximately 6% of Chilean GDP, while also accounting for 64% of total capital inflows, both high levels relative to most nations.[1] In fact, Chile was the first Latin American country to receive an investment-grade credit rating from international rating agencies, including Standard & Poor's and Duffand Phelps.[2] More importantly, it has been able to maintain this rating throughout the recent financial crises affecting all emerging economies, and currently holds the lowest risk rating in Latin America.

A key component of Chile's successful attraction of foreign investment has been the establishment in 1974 of Decree Law 600 or DL 600. Although the details of this law are highlighted in another section of this report, the highlights of DL 600 are that it allows 100% foreign ownership of enterprises in Chile in most important industries. In addition, immediate profit remittance to the investing country is allowed, while capital repatriation is allowed after one year of operations. Because of this attractive legal framework, foreign firms have invested significant sums into a variety of Chile's most important industries, including telecommunications infrastructure, agriculture, mining and forestry. Total FDI for 1998 was above US$7.6 billion.[3]

Investment Vehicles for Internet and Technology-related Ventures

While a large amount of FDI has been directed to Chile in recent years, most of these funds have gone to traditional and established industries such as mining, agriculture and retail. However, while the Internet economy continues to develop in Latin America, relatively few vehicles exist for recently established start-up firms in this sector to acquire the necessary financing to develop into a sustainable enterprise. Financing in Chile has traditionally been based on the existence of hard assets as collateral, something that does not exist with most Internet firms.

While Chile enjoys an established pension fund administration system (AFP), this money is usually restricted from going to high-risk investments. However, this large pool of funds could eventually provide a resource for smaller firms if current legislation is modified to allow a small proportion to be invested in this area. One other important aspect of this fund is that it is competition to foreign investment, and thus could dissuade this flow in certain instances.

Nevertheless, most investment in the emerging technology sector in Chile has come from foreign sources, especially from large telecommunication firms. For example, Telefonica of Spain now owns *Compania de Telecomunicaciones de Chile* (CTC), the most important Chilean telecom company.

Currently, CTC/Telefonica controls 89% of all telephone lines in the country and is rapidly increasing its lead as an Internet Service Provider (ISP).[4] The firm has also announced a joint investment of $900 million to install a submarine fiber optic cable network linking all countries of Latin America with connections in the Pacific and Atlantic oceans.

AT&T has also placed significant investments into Chilean Latin American telecom infrastructure, evidenced by their acquisition and subsequent merger of Netstream, a local exchange carrier in Brazil and FirstCom, a publicly traded company with competitive telecommunications operations in Chile merger.[5] It should be noted that the largest national long distance carrier, Entel, has also staked a claim in the future of Chilean telecom with its recent announcement of a $100 million public bond issue, the proceeds of which will primarily be used on Internet and wireless telephony development.

Additional sources of financing from the private sector include foreign technology firms such as StarMedia, a US-based company that offers a pan-regional portal website for Latin America. This firm recently acquired Servicios Interactivos, a company that develops Internet content for businesses and manages portals focused on Chilean content. Also, US-based Akamai technologies recently invested $1 million into the Chilean ISP Intercity, which will allow the firm to host US-based websites, thereby reducing downloading times for Chilean Internet users.[6]

Another potential source of investment includes nascent venture capital firms that focus on Latin America. The pioneer firm in this field is **Explorador.net**, a $20 million San Francisco-based fund that is investing exclusively in Internet ventures in Latin America. To date, they have invested in several companies with a Chilean component. These include ***guby.com***, a Chilean based association of Latin American portals, and ***onescope.com***, an online foodservice company that is connecting Chilean wineries with US buyers. Other firms that are involved in investing in this space include **Chase Capital Management, Flatiron Partners and Citicorp Venture Capital.** As this investment opportunity is so new, many of these firms are just now beginning to extend their portfolios into Latin America. Also, because of Chile's relatively small population and e-commerce potential, most investment is being directed toward pan-regional projects rather than country-specific businesses.

Finally, as noted in the Government Initiatives section of this paper, the Chilean government is not neglecting its role in the development of the national emerging technology industry. It has developed funds such as FONTEC, the National Fund for the Development of Technology that provides funding to promising technology firms in the private sector. Another government fund is FONDEF, which directs its resources toward technology research in the academic realm that is aligned with industrial needs. Another fund is the Development and Innovation Fund (FDI), which has been established to provide financing to technological innovation in areas of strategic impact for the economic and social development of the nation.[7]

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[1] Federation of Chilean Industries

[2] Ibid

[3] ProChile Website

[4] CTC Website

[5] AT&T Website

[6] Business News Americas

[7] Innovacion Website

PRIVATE SECTOR

Overview

Aggressive growth and development in the telecommunications sector is enabling this thickening of business and organizational usage of the Internet. Ecommerce remains minimal, but firms and interest groups are rapidly adopting the web as a means of interaction, whether it is business to consumer, business to business, advocate to citizen, or politician to constituent. While the breadth of organizations indicates a growing cultural acceptance, even embeddedness of the Internet in Chilean economic, political, and social life, the community that is being established is still only an elite one. Currently, cost persists as a significant barrier to access. It remains to be seen if new government regulation and/or market forces can increase the Internet franchise from its current 5%.
Complete listing of online businesses at http://www.brujula.cl/empresas and for online organizations at http://www.brujula.cl/organization.

Private Firms and Organizations

In Chile, an astonishingly wide variety of private sector organizations are employing, promoting, and developing the Internet as an integral part of their core business or principle mission. However, what is also clear is that Internet use has not necessarily penetrated deeply into many sectors of the economy. While some industries, notably the news media, telecommunications, and banking, have made extensive use of the web, others, notably mining and agriculture, have been less eager to adopt the new medium. In terms of for-profit businesses, it appears that consumer-oriented firms are leading the way, with business-to-business operations establishing a second wave of online activity, as exemplified by the state-owned mining company Codelco recent offering of online tracking of copper shipments. (*Business Week, 25 October 1999*) While ecommerce is the Chile is still inconsequential in terms of dollar value, the establishment of an Internet usage and thereby an Internet culture is being fostered by the amount of business presence on the web.

Perhaps, more important than the impact of traditional business going online though is the presence of several government initiatives and private sector organizations and firms in Chile devoted to providing the software, technical assistance, business contacts necessary for a new and established businesses to make use of the Internet. Examples include broad-based organizations like Intec (www.intec.cl), which offers an extensive range of seminars, publications, and consulting services aimed at facilitating the use of technology. They cover everything from ecommerce to distance education to organizational restructuring. Importantly, niche businesses are also springing up like RedNova Technologies (www.rednova.cl), which provides software and technology consulting exclusively to financial institutions.

Of course, native portals should not be left out of the Internet development equation. **StarMedia's** and **Yahoo's** regional sites offer Chilean content, but the existence of **Brujula.cl**, **OpenChile.cl**, and **Huifa.cl**, with their extensive local content, is vital to growth of the Chilean Internet community. Moreover, Chile is now seeing the creation of niche portals. One such effort is **Panoramas.cl**, an arts and entertainment portal. Another such effort is **ChilNet.cl**, which serves as a business-to-business directory. ChilNet is also bilingual, the goal of which is clearly to encourage interaction between North American and Chilean firms. Foreign capital has played a key role in the establishment of Chile's superior telecommunications infrastructure, so it is natural that Chilean entrepreneurs would seek to encourage this sort of investment for the increasing variety of Internet ventures. Moreover, ChilNet is currently transforming itself into Mercantil.com, a pan-regional version of its former self. Thus the challenge of maintaining a balance between attracting foreign investment and realizing the economies of scale associated with pan-regional initiatives on the one hand and creating native content, promoting online business, and stimulating local web-based communities on the one other will continue to persist for Chile for some time to come.

The StarMedia Network is the leading Internet media company targeting Latin America and other Spanish- and Portuguese-speaking markets worldwide The company is committed to providing Spanish and Portuguese speakers with a complete selection of services and products that take full advantage of Internet technologies, including e-commerce offerings. StarMedia Network operates:

- StarMedia.com, the leading global online community for Latin America and Spanish and Portuguese speakers
- Periscopio, a new, powerful information portal for Spanish speakers worldwide
- StarMedia Acesso/Acceso, a premium Internet access service in Latin America
- LatinRed , one of the largest Spanish language online communities
- OpenChile,a local Chilean portal

StarMedia Network provides advertisers and merchants targeted access to Spanish- and Portuguese-speaking Internet users. Some of StarMedia Network's strategic relationships include Netscape Communications, Real Networks, CDNOW, Reuters, eBay, National Broadcasting Company, Hearst Communications, and Fininvest. It has recently partnered with eOffPrice.com for ecommerce - click here for the article. This is one of many emerging attempts to make ecommerce a reality in Chile and Latin America in general. The company was founded in 1996, and it employs over 450 people with operations throughout Latin America, the U.S. and Europe.

IES Ltd is an outsourcing company based in Chile. It represents a revolutionary idea in today's world. Given the lack of computer scientists in industy, a phenomenon which is bound to worsen over the next years, one of the solutions proposed has been that of outsourcing, i.e. sub-contract another company to do a specific task. IES Ltd focuses its expertice on telephony over IP.

However, it is a lot more diversified than that. Apart from the personal an business outsourcing, and the consulting it does, it also acts as a middleman between companies that need skilled computer science professionals, and individuals that are looking for work in this field, and vice-versa. The latter can post their skills and resumes on IES's website, and similarly, companies can request the appropriate skills needed for the position that they offer. This specific aspect is also the target of a new venture capital startup called Laborum.cl (website currently down) which is the equivalent of USA's Monster.com and HotJobs.com.

It provides individuals and companies with internet accessories (hardware and software) and also does web site development.

IES also offers courses and seminars on computer science and hence produces its own 'breed' of employees, which will ultimately be part of the computer science workforce of Chile in the future.

CLS (ChileSite) and InterChile are two of many companies that are involved with software and web applications and content development in Chile. The latter boasts around 80 client businesses. This area seems to be very popular, with the average search for companies that are dealing with this issue yielding more than 20 companies in the Metropolitan area alone.

Telecommunication Companies

CTC's Internet commercial strategy is, amongst others, oriented towards education and expansion of Internet services in Chile. The company offers free connection for primary and secondary schools and provides free training, mainly to students and teachers.

In 1998, the Ministry of Education, with the support of CTC, launched the Internet Education 2000 Project to supply the entire Chilean educational system with Internet access. For this purpose, CTC plans to connect to Internet a

minimum of 6,500 primary and secondary schools during 1999 and to open personal e-mail accounts for primary and secondary school teachers and students over the course of the next two years.

The following services were introduced in 1998:

- InfoChile: a special Internet access plan, which allows clients to access only Chilean web sites available through CTC Internet, and provides an electronic mailbox that allows for the transmission of messages worldwide. This plan has a lower cost than traditional Internet access plans.
- Ciudad Virtual (Virtual City): a site that is intended to form an Internet community, providing free services to participants, such as web-mail, web-chat, news and information on movies and events.
- Internet Hogar (Home Internet): a product aimed at the residential segment, which provides easy access and includes a list containing the last web sites visited and the customer's Internet usage over the previous five days.

BellSouth currently offers voice communications plus a variety of value-added services:

- "O Send"
  - Free access for customers to reach BellSouth customer service. Customers can also obtain current account balances.
- "Movimemo"
  - Free voice mail.
- "Movimas"
  - Custom calling services including call waiting, call transfer and three-way calling.
- "Movidato"
  - Access to on-line data including stock exchange information, currency change rates, weather, and emergency telephone numbers.
- Cellular Roaming
- National Roaming: BellSouth offers roaming service throughout Chile.
- Internet Access

All the features above are very desirable for a company starting up, as well as companies that want to keep up with the latest news, organize better and increase productivity.

BellSouth provides e-commerce services for its small business clients. Small businesses hence have the opportunity to take advantage of real-time, internet based, e-commerce solutions to let their business grow. Click here for the related article.

It is expected that more and more small, medium and large sized companies will start using the internet to advertise and sell their products and services, as online sales continue to grow in Chile. They have grown 41% in October, according to IBM Chile CEO Roberto Alvarez. In the first 10 months of 1999, Chileans have completed 37,400 transactions totaling US$2.5mn (*src: El Diario*).

To learn more about Bellsouth, click here.

Government Initiatives

The Chilean government, with its vast reach, has also set up institutions to encourage Internet development. Most notable are the Enlaces educational network (www.enlaces.cl) and the Innovacion program (www.innovacion.cl).

Enlaces

For further information on the Enlaces program, please see our **Educational Opportunities** page.

Innovacion

Innovacion is a government agency devoted to advancing the use of technology and human resource development in all sectors of the Chilean economy. The implementation of that mission is manifold. Innovacion studies and issues far-reaching reports on the state of innovation, technology imports and exports, the growth of the IT labor force. They send teams to the United States to learn and adopt the practices of Silicon Valley. The issue a quarterly journal that offers case studies, interviews, and other articles aimed at the managerial class. Perhaps, most importantly, Innovacion funds research and development efforts in all technological sectors. Two key funds are **FONTEC** (Fondo Nacional de Desarrollo Tecnológico y Productivo), which funds private sector R&D, and **FONDEF** (Fondo de Fomento al Desarrollo Científico y Tecnológico), which funds university and foundation research that is allied with an industrial organization.

Sector Económico	Número de proyectos	Costo Total de los Proyectos	Aportes FONTEC	Participación Sector*
Agropecuario	199	25.460	10.583	22,8%
Biotecnología	15	3.056	1.070	2,3%
Construcción	24	3.363	1.203	2,6%
Electricidad, Gas y Agua	3	707	237	0,5%
Forestal	32	4.407	1.941	4,2%
Informática	58	9.425	3.258	7,0%
Manufactura	343	52.007	19.417	41,8%
Minería	17	6.333	2.382	5,1%
Pesca y Acuicultura	51	9.119	3.699	8,0%
Servicios	47	6.677	2.680	5,8%
Total	**789**	**120.555**	**46.470**	**100,0%**

Notas: No se consideran los años anteriores ya que la información relativa al sector de actividad es incompleta para estos años. Se considera el sector de impacto del proyecto.
Las cifras presentadas aquí no coinciden con las estadísticas oficiales de Fontec, ya que no se incluyen los proyectos que fueron liquidados o desistidos después de su aprobación.
* Porcentaje calculado en relación a los aportes de FONTEC.

Non-profit Organizations

Also, impressive is the number of non-profits organizations online in Chile. While many are Chilean arms of international NGO's, many homegrown advocates for indigenous, environmental, and human rights maintain web presences. These sites primarily seek to educate the public with respect to their cause and to build communities

through chat or discussion forum. Derechos Chile (www.derechoschile.com) is one such example that has seen increased activity as a result of the Pinochet affair. While these sites tend to be less sophisticated than their for-profit counterparts, their adoption of the medium is vital step in broadening the role of the Internet in Chilean civil society.

Political parties are another civil society sector that has embraced the Internet. Many of the candidates in the 1999 elections have web sites. The better funded front-runners have more elaborate sites, but the presence of the political campaigns on the web is another indication that the medium is not only credible, but that it is becoming embedded within the society. Examples include, the Ricardo Lagos (center-left coalition) site (http://www.lagos.cl/) and the Joaquin Lavin (conservative rightest coalition) site (http://www.joaquinlavin.cl/). Other presidential campaign sites can be found at: http://www.brujula.cl/gobierno/politica/elec1999/

CASE STUDY: CHILE INFORMATION PROJECT

http://www.chip.cl

Contents

Overview

The Chile Information Project (CHIP) is an umbrella organization of bilingual web enterprises; its web site serves as a portal to diverse information resources for both Chilean and international audiences. While CHIP's content range includes the wine industry, classified ads, and environmental activism, it is its longest-running projects that are most economically viable (for-profit) and socially relevant (non-profit). The human rights site, Derechos Chile **(**www.derechoschile.com), the English language newspaper, The Santiago Times (www.santiagotimes.cl), and its business sites, Finning News (www.finningnews.cl), a mining and agrilculture daily, and ChilNet (www.chilnet.cl), a business-to-business directory, really exemplify and expand our previous research. CHIP's involvement in these projects varies from founding and developing as in the case of Derechos Chile and the Santiago Times, to initiating an online version of an existing business as in the case of Finning News, to coordinating new ventures with existing web businesses as in the case of ChilNet. CHIP was established by expatriot-Arkansasan Steve Anderson and its staff is about half Chilean and half North American. The staffs of the individual enterprises overlap with the CHIP staff in some cases and are completely independent in others, notably ChilNet.

The very existence of a bilingual portal highlights perhaps the most salient point for Internet and, indeed economic, development in Chile: external relationships are crucial. CHIP exists to establish links both in the business and social movement realms between Chileans and English-speakers, principally North Americans. Finning News, for example, dovetails with the overarching Chilean model of export-led

development, by providing external customers and investors with detailed reports on the industries that drive the Chilean economy. Nevertheless, efforts like ChilNet exemplify a desire to broaden the sectors to which international involvement is drawn. As we've seen, foreign investment in various telecommunications sectors including local, long-distance, and mobile telephony as well as ISPs and even portals has been fundamental to the development of these markets. ChilNet seeks to encourage similar foreign involvement in services, the media, and the information technology industry, among others.

Despite this heavy economic development focus, CHIP was founded in 1991, with the backing of the Catholic Church's human rights organization, the Vicaria de Solidaridad, as a newsletter covering Chile's transition to democracy. By 1994, as a sort of democratic consolidation was established, Anderson added business and mining news to attract the readership of the multinational business community. Since then CHIP has segmented its work into various distinct enterprises, but, interestingly, its original impetus, its "need" in Fred Gibbons's expression, was social rather than economic. More so, Derechos Chile was as much a response to a societal desire for human rights information after the dictatorship as it was the result of Anderson's personal passion, his social entrepreneurship.

Funding/Business Strategy

While CHIP started as a human rights NGO, a good degree of entrepreneurial initiative has sustained it. Anderson has invested over US$40,000 of his own money, but the individual units have developed a wealth of financing tactics. On the non-profit side, Derechos Chile has been funded by two consecutive grants from the Ford Foundation totaling US$150,000 over 1997-1999. That funding will run out in 2000 though, and the group has applied for inclusion in and a grant from the Human Rights Roundtable, "a creature of the Defense Ministry". This proposed arrangement may well compromise the objective position of the organization, but as the Pinochet case has again made human rights a volatile topic, predictions are difficult to make right now. As our exemplary non-profit is potentially transitioning from external to state funding, the for-profit business of CHIP are conversely looking beyond Chile's borders. The Santiago Times, despite some advertising revenues, switched to a subscription model which now brings in US$30,000 annually. Finning News, a very recent entry to the Internet space, is funded by the parent company. While ChilNet is betting on ecommerce and advertising for revenue in the medium to long term, it is currently seeking venture capital. Because local financing is not perceived as feasible in the long-term, two pan-regional plans are emerging from CHIP's news and business sites. Anderson has pitched the idea of becoming the "South American Times" to all three organizations, while simultaneously, ChilNet has begun work on Mercantil.com which expands the B2B directory concept to the whole of Latin America. These initiatives clearly indicate the perception and, we would argue, reality that Chile's limited market size requires a pan-regional approach to remain viable in terms of early funding and revenues down the line. Mercantil.com's move to pan-regionalism indicates its desire to satisfy the criteria expressed by Explorador.net for venture funding. In addition to the actual and potential funding sources described above, CHIP has also benefited from commissions on its online tourism operations.

Infrastructure/Access

The CHIP businesses, based in Santiago, benefit from the metropolitan areas advanced (by Latin American standards) telecommunications infrastructure, though interruptions in service are certainly not unknown. Anderson acknowledges the barrier to access posed by connection costs, but seems generally unfazed. Anderson's lack of serious concern can be attributed to the fact that many of CHIP's operations focus on external and internal elite audiences, where access is more widespread. However, Anderson expressed strong views about freedom of information and its democratizing capacity; this goal though is likely to be compromised with such a narrow audience. Now that the digital signature impediment has been removed, one infrastructural weakness that still inhibits CHIP is TransBank's monopoly on credit-card transactions in Chile, which translates into prohibitively high commissions and unreliable data networks. CHIP has circumvented this obstacle by clearing its ecommerce sales through a Dallas, TX company, an option that may be difficult for other ecommerce start-ups without U.S. ties to emulate.

Labor/Regulation

According to Anderson, the CHIP enterprises have not had difficulty with staffing. As purveyors of information, though, editorial and journalism skills are CHIP's greatest needs. Some IT staff is obviously required, but CHIP is following Nashoud Forbes' notion of using technology rather than building it. So, without intense programming or engineering needs, human capital has not been a significant issue for CHIP. Anderson does express mild concern about locating Portuguese speakers as the pan-regional efforts take-off. While IT is not a major concern, intellectual property law is a significant issue to CHIP. Though the reporters are well trained and properly acknowledge sources, as a relatively small media-concern CHIP does have to make use of other publications content for daily updates. CHIP seems to be relying on the lax "grey area" in domestic IP law which is at odds with Chile's more stringent international stance exemplified by its membership in several IP regimes. Conversely, CHIP's philosophy of informational freedom seems to outweigh concerns about the reuse of their own articles. Financial concerns did, however, lead Anderson to move to a restricted access subscription model for the Santiago Times, which results in better protection for their proprietary content.

Assessment and Future Challenges

The Chile Information Project illustrates the outward focus of Internet development in Chile. Rather than innovation in the private sector, we see established Chilean industries leading the move online even for ancillary industries as the trade-paper Finning News exemplifies. Also, Chile's small domestic market suggests that both external funding and pan-regional business strategies for internet enterprises are likely necessary for continued growth. However, while Internet innovation may be unlikely in Chile, innovativeness is not. The enterprises examined above are finding ways to use existing web models but they are modifying those models to leverage Chile's particular economic strengths and social interests. Derechos Chile, for example, responds to the particular Chilean issue of human rights. While it again required international influence in the form of the Spanish courts' case against Pinochet to bring the issue

back to the fore in Chile, Derechos Chile has attracted a great deal of attention since the case began, with its users jumping from 2,000 to 12,000 per month. Foreign citations of the site are many, but its ability to inform and coordinate Chileans through its discussion forms is its raison-d'être. Again, Forbes' maxim is invoked. Our general overview of the private sector did highlight many other examples of Chile-centric web enterprises ranging from local general and specialty portals to the domestic high-tech trade organizations that promote distance education among other things to the presence of web-software start-ups exclusively for the Chilean market. Also, Government initiatives such as the development funds FONTEC and FONDEF and Enlaces are likewise geared toward Chile-focused development. Still, the story of the Internet in Chile is one of international involvement. CHIP's business and news initiatives demonstrate this fact. The challenge for Chile is to maintain the level of international involvement as just that, not reliance and not dominance. So far, Chile seems to be treading this fine line well.

While economic motivation does lead internet development in Chile, it is not the only driving force. Anderson's ultimate goal is to provide an alternative source of news to counteract the conservative El Mercurio, which owns several of the country's prominent newspapers. Though the economy of scale a pan-regional daily offers may be the only perceived way to fund such an operation, the root of this initiative like that of Derechos Chile is a social cause and an individual's passion, not economic incentive and the will of a multinational conglomerate. While there is the danger of unequal internet access exacerbating the inequalities produced by two decades of neoliberal policies, it is encouraging to see that there are counter-balancing forces at work in Chile.

**Sources for this case study come from the web sites cited above and from an email interview with Steve Anderson conducted between 5 November and 15 November 1999.*

Drawn from previous research:

CASE STUDY: ENLACES

(The information contained in this section is based on the documents available on Enlaces page: http://www.enlaces.cl/documentos.html)

Introduction: Chile Needs Better Educated People

When Fred Gibbons, a professor in the computer science and business schools at Stanford, lectured to our class, he spoke enthusiastically of "dreams", "enablers", "passion", and "need". In the broad meanings of these words lay the secret to creating a successful — that is, profitable — initiative utilizing technology. Nevertheless, it is important to consider for whom the profit is made, over what time span, and how much coordination is involved to achieve this profit. If the profit is distributed widely to many people, over the long term, and the fixed costs are incredibly high because of necessary coordination and regulatory changes, the government may be the only institution — with the help of the private sector — to turn the dream into reality. The innovative Chilean education program to bring information technology into schools is a great example of an initiative that successfully identified a need, took advantage of enabling conditions in the Chilean economy, and developed into a viable, long term, sustainable program that will revolutionize Chile''s human capital base.

The Enlaces project, born in the primarily rural, poor, indigenous 9th Region of Chile, was made to satisfy a need that this region epitomized: education was not universal, not of high quality, and was not preparing marginalized people for the world stage. It was out of national interest for Chile that this program be developed to bring workers up to international standards. With education, they knew there were no diminishing returns; knowledge is an unlimited good that adds value at every level of society. If Chile was going to compete in the long term, it had to prepare for the global information economy and the government, with the help of interested and willing international groups like USAID and the World Bank, realized this challenge and developed a program that would meet it. Having pinpointed the need, using an analysis similar to that of Gibbons, I will look at the enabling factors, the competitive environment and timing, and the suppliers that conspired to make Enlaces the success story that it has been over the last seven years.

Enabling Factors

For most policies that have incurred social change over the last decade, a crucial enabling factor was the transition to democracy. Though many saw the transition as compromised by the previous regime and therefore incapable of breaking decisively and positively with the past fallacious policies. Nevertheless, on the broad fronts of social policy, victories were won. In education, though Chile was so distracted by its change of government during 1989-1990 that it missed the world conference on education in which the World Bank and other international organizations laid out the goals for education the world over, the coalition for democracy within the country already had reform on their agenda. The educational reform, by setting in motion a decentralization of government functions, by providing a consensus for change on key points, and by convincing the World Bank of its validity and dedication to the democratization of access to quality education, was a crucial enabler for the success of Enlaces. Had Chile tried to implement a broad educational reform, allowed the initial impetus to die down and then added Enlaces as an appendage just as organizations were re-crystallizing around new paradigms, it might not have succeeded as well.

Another crucial factor for the success of Enlaces, ironically, was the stability of the government. That is, change in Latin America is often not stable change but often violent and leads to reversal of many policies complicating efforts at effective social development. Thus, the fact that crucial economic policies were maintained, and the fact that the government continued with the privatization of the state monopolies, helped lower costs for the state making effective education expenditure a possibility. Coincidentally, the privatization and slow opening of the telecommunications market was key to lowering costs of the Internet and yet making sure that a national company such as CTC would have the resources finance a nationwide project such as Enlaces. Also, the trade deal to assure duty-free import of computers can be seen as the continuation of open trade policy that helped lower costs to the level where broad implementation was possible.

In terms of infrastructure, as has been shown by our previous research, the social and physical infrastructure that Chile possess cannot be overlooked as contributing to and allowing the growth of Enlaces. In addition, one could actually argue that the brilliance of Enlaces, is that it paves its own way by training, teaching, fomenting interest, and putting the technology in the hands of people.

Competing Factors

There were no competitors in the sense that other private or non-government groups were planning to offer computers and Internet to people for educational purposes. However, one could say that there were competitors for the resources spent on Enlaces and other needs within the Ministry of Education and that, had the government not taken the leadership in making the Internet primarily and initially an educational tool for the majority of Chileans, it is possible the Internet would have followed the more consumer, commercially driven model as in the US. It is important to stress that the substitutes were there and are still there in terms of traditional education and, to some extent, the verdict is still out on whether Enlaces is really worth the costs. Does it contribute to the human capital development of the country? Yes. Is it more effective than traditional teaching methods? Unclear. The truth is that it beats all competitors in the area of providing computer experience to Chileans that raises their ability to be effective workers in the global information economy. Nevertheless, research could be done on a cost-benefit analysis of Enlaces in the

short and long run.

Suppliers

In this section, we can identify several important suppliers. First, the government must supply coordination and regulatory infrastructure. It has done a very good job with coordinating the efforts, as the Educational Reform has come together with putting the State on-line, giving access to information for all the teachers and administrators in the country. The Ministry of Education's web site and Enlaces were both in the country's top five sites in a competition among government sites. They are comprehensive and easy to use (http://www.mineduc.cl and http://www.enlaces.cl). In terms of regulation, the government has been in step with the US government on the issues, legalizing the use of electronic documents and digital signatures in June of 1999. Concerning another fundamental supply for Enlaces, the government also offers financing.

Financing for Enlaces comes from the World Bank, the Federal Government, and local municipalities and communities. In its first phase, $170 million of the $243 million for the program came from the WB, while in its second phase the funding had dropped to $37 million of a $106 million total budget. In both cases, the Federal Government has supplied the remainder. This cannot overshadow the fact that the financial capital has also come from obviated costs because of donations of equipment from the Chilean Telecommunications Company. In another interesting source, the voting precincts all over the country, 700 of which are located in schools, are equipped with a computer, that is for educational use in tandem with the Enlaces program when not occupied for voting. Now the government guarantees only 25% of the overall budget, with that money directed primarily to lower-income schools. A crucial step in the strengthening of the program will have to be taken towards more and more funding from the local community.

Looking at the human capital side, one might say that Enlaces is solving its own problem. By working with the Webs of Technical Assistance (RATEs) located at six Zonal Centers and numerous sub-centers throughout Chile, almost all of which are located in the Computer Science Departments of nearby universities, Enlaces has been able to leverage the concentration of programming and computer knowledge in these places for their own use. The specialists transfer their knowledge to the teachers through the two years of free and obligatory training offered by Enlaces for any teacher that cares to take part. Subsequently, the teachers learn more by interacting with one another until they finish the two years and are able to become trainers themselves and/or start teaching students. Along with competitions, conferences for both teachers and youths, Enlaces has been able to foment interest in technology, which will move well beyond solving the seed corn problem, or so is the hope.

The supply of hardware comes from various donations, consists of the latest equipment (both Macs and PCs), and also is bought with the funds. The estimate is that the hardware represents nearly 70% of total costs and thus is still one of the most difficult supplies to obtain, maintain, and utilize effectively. The larger scale infrastructure like the phone lines and Internet backbone is not as much a problem. Nor, on the other hand, is the software that was designed by Chileans and cultivates a very easy-to-use interface. Overall, the supply of various capital for the project has been steady in coming and has been greatly facilitated by the proactive Chilean government.

Lessons Learned from Enlaces: Links between Chileans and the World

There are several lessons to be learned from looking at Enlaces, its growth and success. The most fundamental is that training people to understand and perpetuate the system is crucial. From the ground up, from the poorest, least informed, to the most advanced "techies", it is crucial to integrate the system at some level and make sure the process of project proposal and evaluation is standardized. Second, it is also crucial to maintain local autonomy in some aspect to preserve the local initiative and interest in the technology. Another interesting lesson that parallels the private sector strategy is that pilot programs can serve like Beta tests and ought to be utilized to perfect policies before they are unleashed on a nationwide scale. Just as in business, a bad reputation from the start permanently stains your validity in the future. Had the teachers become more afraid of the computers than they already were in some cases, it would have been very difficult to make this program work. The last lesson is obvious: financing is crucial. Without the help of the World Bank, USAID, the Chilean Telecommunications Company, the government, and local business and parents, this program would not function. Furthermore, where these funds are obtained and how much comes from each level is crucial in determining how much interest and energy is invested at the various levels. If parents had not contributed, would they be as willing to take part in coming up with project ideas or evaluations; and if the World Bank had not been willing to offer its help, would they have been as supportive with models and data for national program structure development? Enlaces is a great example of a public initiative, driven by educational and social concerns, funded by large private and public sources, dedicated to the propagation of the Internet in Chile, and oriented towards connecting Chileans with other Chileans and to the World.

BULLETIN BOARD

Welcome to the Information Revolution in Chile Bulletin Board. Feel free to post your comments. ***Public posts are always encouraged****, however, If you do not wish to do so, please use our '****Mail****' link on your left, under the section* ***Feedback****. Thank you for your contribution to this bulletin board.* Stanford 1999

From:

Reply to message (optional):

Your comment:

Post Clear form

You can use HTML in your name or comments to include things such as

- *Links, e.g. <A HREF = http://www.stanford.edu> Stanford </A>*
- *Photos, e.g. <IMG SRC = http://www.myhost.domain/pic.jpg> (but please keep them small, ~40Kb)*
- *Email, e.g. <A HREF = mailto:me@myhost.mydomain> My name </A>*

or to make something ***bold*** *or italic.*

To reply to a specific post, use the 'Reply to message' field on your left. Just type in the unique number of the post as it appears on the comments' listing at the bottom of the page.

Message	Reply to message	From	Comment
1		Iraklis Diamantidis	 Lycos.com, the well-known internet search engine, has recently launched a localised version for Chile, as well as some other Latin American countries, such as Brazil and Mexico. Quoting Lycos' president and CEO Bob Davis, ***"Latin America is poised to become the next great growth center for Internet services"*** *[src: Charles Schwab MarketAlert, Internet Daily 10/19/1999]*. Another well known search engine launching a Chile-specific site is Yahoo!.
2		Iraklis Diamantidis	Check out BusinessWeek Online's current article on Latin America's fast growing internet market.
3		Iraklis Diamantidis	GlobalOne adds over 1.8 GigaBits/sec of capacity to its Latin America network and announces major customer customer endorsements. Click here for the article.

4		Iraklis Diamantidis	Internet research in Chile showcased at technology conference, *by Adam Clayton Powell III - World Center (10/7/98)*
5		Iraklis Diamantidis	"Can the Venture Capital Model Work for Latin America?" - article from the LatPro website.

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Statement of Objectives

To explore the obstacles and opportunities for the development of the Internet in Chile. To achieve this, we:

- Use unbiased research and analytical thought.
- Cross-check our sources to get to the truth.
- Reach out to the Chilean community for answers, by using their feedback on our website.

We try to put together the current picture in Chile, first in terms of infrastructure, then we build on that and research the opportunities for the development of the internet in terms of education, regulations and financing. We take a look at the private sector and the initiatives it provides.

Then we go deeper and examine two case studies, a for-profit and a non for-profit organization, examining the ways these companies were able to grow and promote the internet while preserving or sacrificing the local culture on the way.

Finally, we provide our conclusions from this study. We try to conclude on our findings and attempt to speculate on the future of the internet in Chile.

The Group

GENERAL

Chile is located on the southwestern edge of South America. It borders Peru and Bolivia to the north, Argentina to the east and the Pacific Ocean to the west. The country is 2,600 miles long but just 110 miles wide. The Andes mountains are to blame for this mapmaker's nightmare, effectively sealing off the country from its neighbors on all but its northernmost coastal border with Peru.

The country has a surface area of approximately 288,252 square miles. The maritime limits of Chile extend 12 miles from the coast, plus an economic zone up to 200 miles off the America and Antarctic coasts. Those 200 miles include marine resources, plus the ocean floor and subfloor. The sea surface is approximately 1.4 million square miles.

Geographically, the country is divided into 12 regions and a metropolitan area which includes Santiago, the capital (click here to see a live camera feed of a panoramic view of the city). In the regions there are 51 provinces and 336 cities. Chile's seasons are mirror images of those in the northern hemisphere, marked most by the tempering effects of Pacific breezes and a relatively narrow, Mediterranean climate. Temperatures rarely stay below freezing and hot summer days are often punctuated by cooling breezes.

Chilean culture and society was strongly informed by waves of immigration, in part from European countries such as Germany, Yugoslavia, Italy and England, beginning in 19th century and continuing into the next. As the Chilean economy has grown, Canadian, Scandanavian, Japanese, Korean and U.S. immigrants have begun to impact the social structures of the country. Chile was founded February 12, 1541 by the Spanish explorer Pedro de Valdivia. The Spanish ruled for 270 years until a new class of Chilean-born settlers began to consider themselves the rightful rulers of the land. Bolstered by democratic movements in France and the United States, Chile declared independence on September 18, 1810.

Eighty-three percent of the population of 15 million live in urban areas and around 39% live in the Metropolitan Region, which has 5.8 million inhabitants. The country is growing at a rate of 1.4% yearly. Nearly 70% of the country is under 40 years of age, and 38% are under 20, while just 7% are over 65. By 2010, the population is estimated to reach 17 million, with an average age of 29. Religious liberty is assured and the country is open to any creed, yet traditionally 75% of the population is Catholic.

The main economic sectors in Chile are mining, industry,

financial markets, agriculture, forestry, retailing, media and marketing, real estate, cargo transportation, passenger transportation, water utilities, energy, electricity, construction and telecommunications.

The national currency is the Chilean Peso (CLP - *Check the current exchange rate*). The GNP per capita is $4810, but the poverty rate is of the order of 21%.

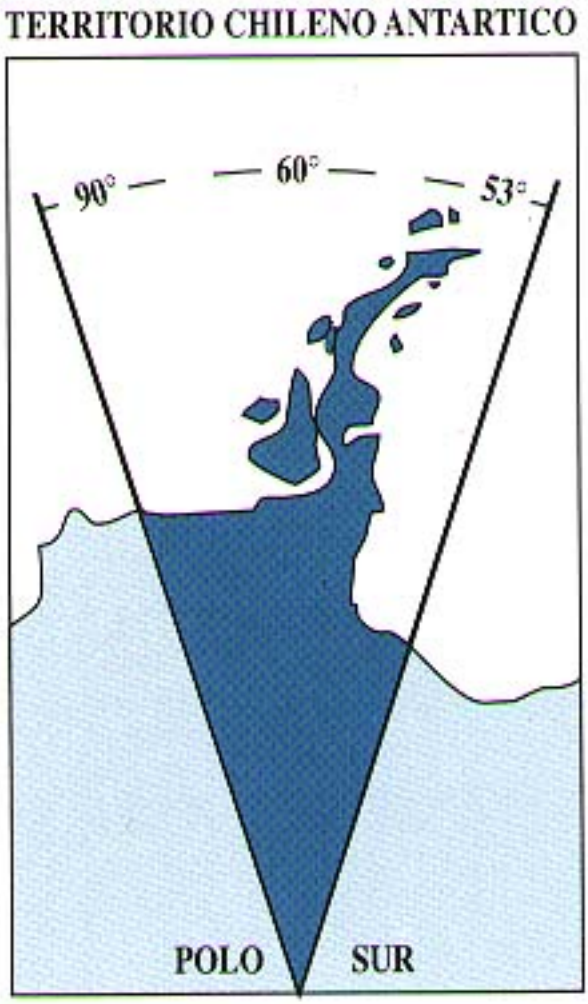
The literacy percentage (male and female) is 95% (src: Word Bank 1998). The official language is Spanish, while English is the second most-used language.

Some material obtained from Spotlight on Chile website

CHILE


IQUIQUE
I REGION
ANTOFAGASTA
II REGION
COPIAPO
III REGION
LA SERENA
IV REGION
VALPARAISO
V REGION
SANTIAGO
REGION METROPOLITANA
RANCAGUA
VI REGION
TALCA
VII REGION
CONCEPCION
VIII REGION
TEMUCO
IX REGION


PUERTO MONTT
X REGION
COYHAIQUE
XI REGION
PUNTA ARENAS
XII REGION


TERRITORIO CHILENO ANTARTICO
90°
60°
53°
POLO SUR

PRESENTATIONS

Presentation 1

Technical capacity, educational opportunities, labor markets, access of opportunity

Presentation 2

Sources of financing, effect of government policies, private sector role

Presentation 3

Comprehensive analysis, confirmed or contrasted with the specific case studies

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