Internet Access in Argentina: Obstacles and Opportunities

About us:

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Internet Access in Argentina: Obstacles and Opportunities


Gallegos
Punta Arenas
Porvenir
Tierra Del Fuego
Ushuaia
Falkland Islands (U. K.)
(Las Malvinas-
claimed by Argentina)
0 200 400 km
0 300 mi
72°
60°
48°

Objectives

1. In depth, multidisciplinary understanding of the current "Last Mile" Internet Access obstacles & opportunities present in Argentina.

2. Obtain contacts and resources to major players in this market segment.

3. If findings are favorable, create a business plan for "Last Mile" Access.

Assumptions

1. Broadband access to the Internet by SOHO is and will continue to be a widely demanded commodity in Argentina, with expectations to increase.

2. This service is as of today still under supplied and expensive.

3. Given 1& 2 above, there is space for new players to enter into this market segment.

Methodology

1. Collect data in the following fields:

- Demographic/social
- Economic indicators
- Government regulation and policies
- Current access infrastructure.
    - Suppliers and development plans
    - Other technologies
- Business and financial environment.

2. Analysis for Business Plan

- Case studies – profit and non-profit.
- Business plan

Demography of the present Argentine society

Argentina Data Profile			
Click on the indicator to view a definition	**1995**	**1998**	**1999**
People			
Population, total	34.8 million	36.1 million	36.6 million
Population density (people per sq km)	12.7	..	..
Population growth (annual %)	1.3	1.3	1.2
Life expectancy at birth, total (years)	..	73.3	..
Fertility rate, total (births per woman)	..	2.6	..
Mortality rate, infant (per 1,000 live births)	22.2	18.6	..
Mortality rate, under-5 (per 1,000 live births)	..	22.0	..
Malnutrition prevalence (% of children under 5)	..	..	..
Urban population (% of total)	88.4	89.3	89.6
Population density, rural (people per sq km)	16.1	..	..
Illiteracy rate, adult male (% of males 15+)	3.6	3.3	3.2
Illiteracy rate, adult female (% of females 15+)	3.7	3.4	3.3
School enrollment, primary (% net)	99.9	..	..
School enrollment, secondary (% net)	71.9	..	..
School enrollment, primary, female (% net)	99.9	..	..
School enrollment, secondary, female (% net)	73.6	..	..
Environment			
Surface area (sq km)	2.8 million	..	..
Forest area (sq. km)	339.4 thousand	..	..
Annual deforestation (% of change)	0.3	..	..
Freshwater resources per capita (cubic meters)	..	..	..
CO2 emissions, industrial (metric tons per capita)	3.7	..	..
Safe water, urban (% of urban population with access)	71.0	..	..
Sanitation, urban (% of urban population with access)	80.0	..	..
Commercial energy use (kg of oil equivalent per capita)	1,613.1	..	..
Electric power consumption (kwh)	1,479.9	..	..
Economy			
GDP at market prices (current US$)	258.3 billion	298.1 billion	281.9 billion
GDP growth (annual %)	-2.8	3.9	-3.5
GNP, Atlas method (current US$)	256.6 billion	289.7 billion	277.9 billion
GNP per capita, Atlas method (current US$)	7,380.0	8,020.0	7,600.0
Inflation, GDP deflator (annual %)	..	..	..
Agriculture, value added (% of GDP)	5.7	5.7	6.4
Industry, value added (% of GDP)	28.0	28.7	32.3
Services, etc., value added (% of GDP)	66.3	65.6	61.2
Exports of goods and services (% of GDP)	9.7	10.4	9.7
Imports of goods and services (% of GDP)	10.1	12.9	10.9
Gross domestic investment (% of GDP)	17.9	19.9	17.7
Current revenue, excluding grants (% of GDP)	14.0	..	..

Overall budget deficit, including grants (% of GDP)	-1.2	..	..
Money and quasi money growth (annual %)	-2.8	10.5	2.4
Technology and infrastructure			
Telephone mainlines (per 1,000 people)	159.1	202.7	..
Telephone average cost of local call (US$ per three minutes)	0.1	0.1	..
Personal computers (per 1,000 people)	24.4	44.3	..
Internet hosts (per 10,000 people)	1.5	15.9	18.2
Roads, paved (%)	29.1	29.5	..
Aircraft departures	112.4 thousand	144.6 thousand	..
Trade and finance			
Trade (% of GDP, PPP)	10.7	12.9	..
Trade in goods as a share of goods GDP (%)	..	..	..
High-technology exports (% of manufactured exports)	3.4	5.5	..
Net barter terms of trade (1995=100)	100.0	..	..
Foreign direct investment, net inflows in reporting country (WDI, current US$)	5.3 billion	6.2 billion	..
Present value of debt (current US$)	..	150.5 billion	..
Total debt service (TDS, current US$)	9.0 billion	21.6 billion	..
Short-term debt outstanding (DOD, current US$)	21.4 billion	31.0 billion	..
Aid per capita (current US$)	4.1	2.1	..

Source: ***World Development Indicators database, July 2000***

Click here to query the database.

http://www.worldbank.org/

With an estimated population of 37 million as of 2000, the labor force is approximately 15 million in total. The 0-14 age bracket represents 27% of the total population; 15-64 year olds are 63%; and 65 and above are 10%. Women outnumber men by a ratio of 1 woman for every 0.98 men. The annual population growth rate is 1.16% per annum, and included in this figure is the positive net

migration of 0.65 migrants per 1,000 population. In addition, this population growth rate is fairly small for Latin American nations. Projections predict that Argentina will have 47.16 million inhabitants by 2025.

The largest city in Argentina is Buenos Aires, the capital city. Its population, including the metropolitan area, exceeds 11 million. The next largest city is Córdoba, with 1.1 million. Next comes Rosario, with just over 1 million. Capital Federal, along with the province of Buenos Aires, amount to 47.7% of the total population of the country.

The racial and ethnic makeup of Argentina is greatly varied. Having experienced great inflows of European immigrants, particularly from Italy and Spain, Argentina has predominantly a European racial structure. The cultural roots from Southern Europe can be seen in everything from cuisine to architecture. Presently, 85% of the population is considered to be white. The residual percentage has a makeup of mestizos and some native Indians, especially in the northwestern provinces.

Unemployment is a serious social problem in Argentina today; therefore I have chosen to place the figures in the demographic and social category. The rates in recent years have not fallen into single digits--from over 17% in 1996, today it is estimated that 14.4% of the workforce are unemployed.

Demography of Internet users in Argentina

- There are approximately 1.5 to 2 million Internet users in Argentina as of December 2000 (Price and Cooke Consultancy)
- 2 out of every 3 Internet users in Argentina are male, and the longer the user has been online, the more likely he is to be male
- However, most users (68%) have only been online for less than 2 years

- Most users are relatively highly-educated-- 71% have gone to college (either finished or incomplete)
- 76% access the Internet from their homes
- Electronic Mail is the highest demanded (frequented) service on the Internet
- Search Engines are the most popular sites, with Yahoo and Altavista being the most popular search engines
- Argentine men are more in favor (>50%) of an unregulated Internet than Argentine women (<30%)
- Only 26% of users bought something over the Internet within the last year, CD's and books being the most popular
- The longer someone has been using the Internet, the more likely he is to buy something online

Observations

Computer sales rocketed last year (2000), with 2.5 million or so in use, most being in homes. And given the severity of the recession that is crippling the economy over the last 30 months, the fact that computers and Internet access are in more demand shows the growing appetite for these technologies. Also, when the economy fully shakes off its sluggish tendencies, one should expect even more rapid growth in the sector.

Education and sex seem to be the strongest determinants for the typical Internet user in Latin America.

Most users are male with at least some college education. But, the newer users tend to have more females as a percentage than in the past. I expect the gender gap will continue to decrease, if trends remain constant, in the near future, as more women begin to log on. Therefore, education could be the only main determinant. Nearly 3 in 4 of the users are college educated. The challenge is then to expand the user-base to include more people of less education.

The Economist claims that there exists enough brains and enterprise, along with plenty of money (i.e. foreign investors) for the Internet to explode in Argentina. As of 2000, Argentina has some 250-300 sites for online sales, totaling $100 million. The Latin auction house *De Remate* is an Argentine-owned company. But many problems still exist, especially concerning logistics. In a sparsely populated country, supply lines and trucking concerns are not always conducive to e-commerce.

Argentina's Economy-- Impact of the Past

- Independence (1816) to ca. 1930-- One of the ten richest nations in the world, fueled by agricultural exports and immigration
- Ca. 1930 to ca. 1990-- State-directed industrial autarky, Import Substitution, a welfare state (Peronism), alternating with military dictatorships, all contributing to economic deterioration (with extreme hyperinflation)
- Ca. 1990 to Present-- Privatization, Deregulation, trade liberalization, Convertibility Plan

Gross Domestic Product (GDP)

- $300 Billion
- In Purchasing-Power Parity, $367 Billion
- GDP per capita $8,000 ($10,000 in ppp terms)

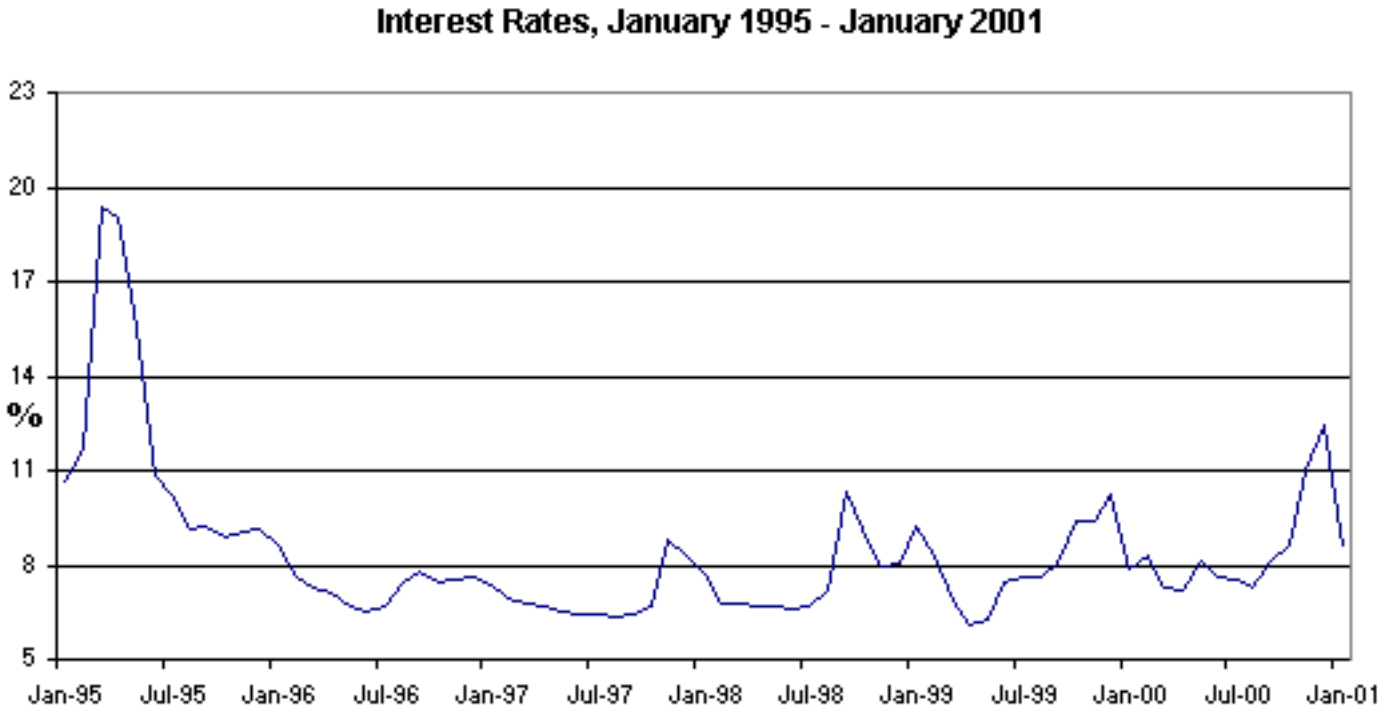
Economic growth rate

- Annual growth expected at 3.5% for FY 2001

Gross Domestic Product Growth, Q1 1995 - Q3 2000

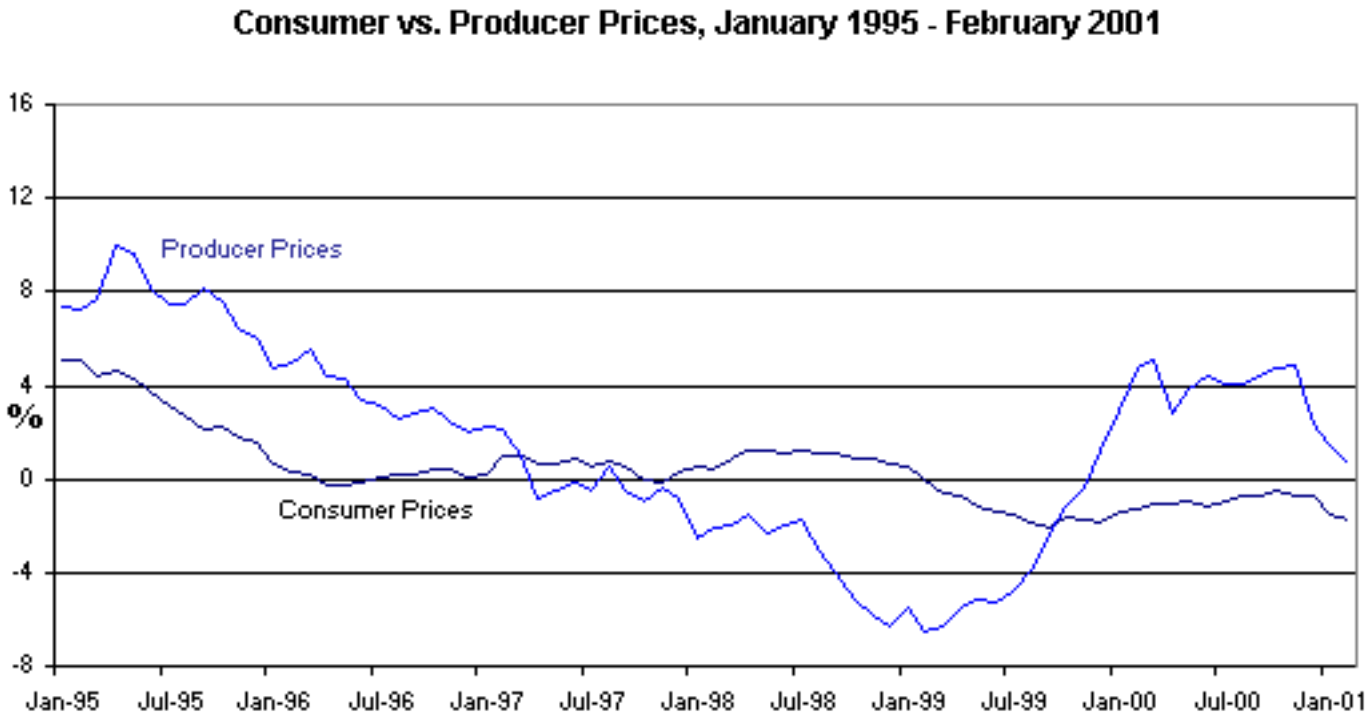
Note: Year-over-year growth in quarterly GDP.
Source: Ministerio de Economía y Obras y Servicios Públicos, Secretaría de Programación Económica.

Interest Rates



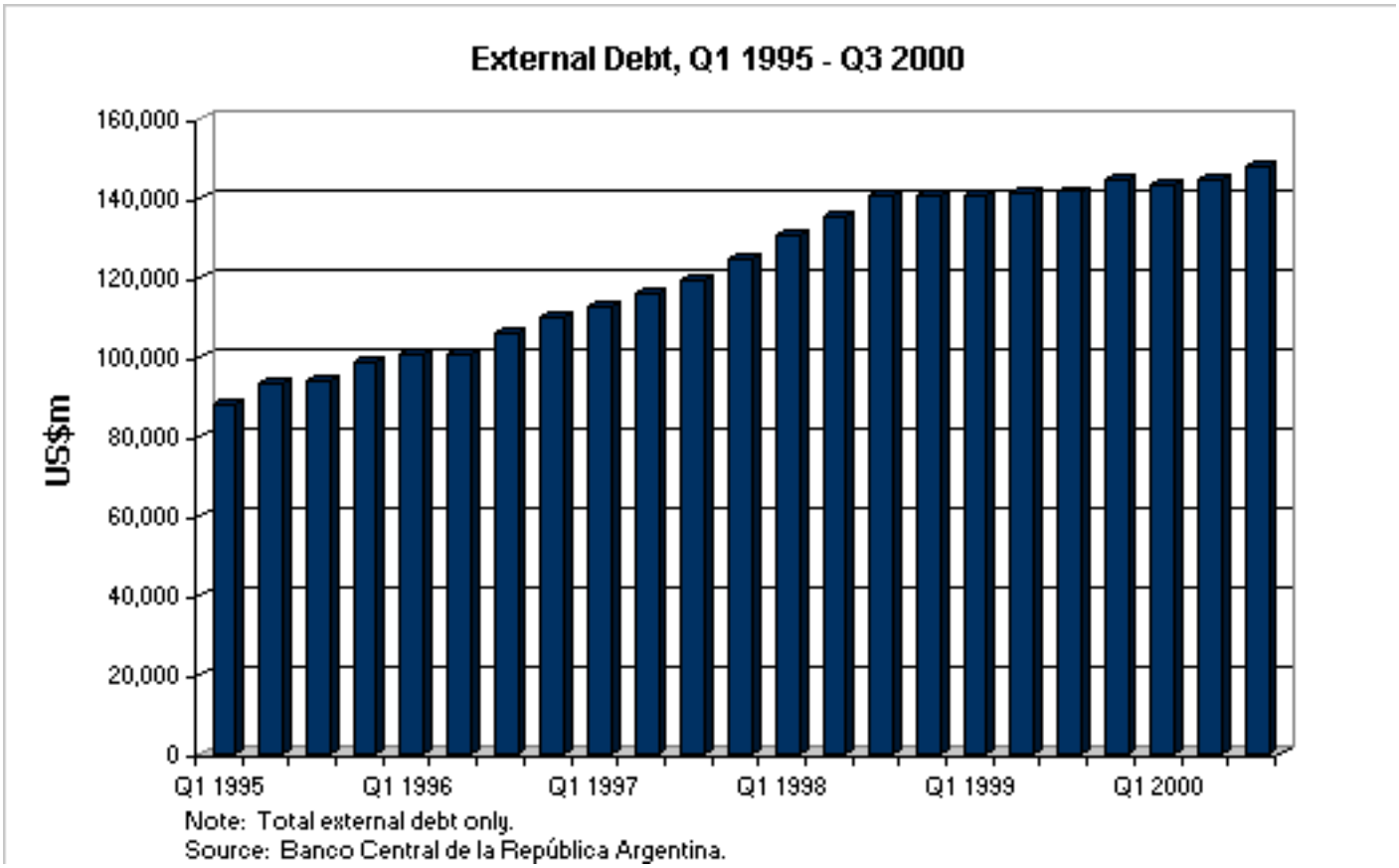
Note: Average monthly 30-59 day Central Bank time deposits.
Source: Banco Central de la República Argentina.

Inflation



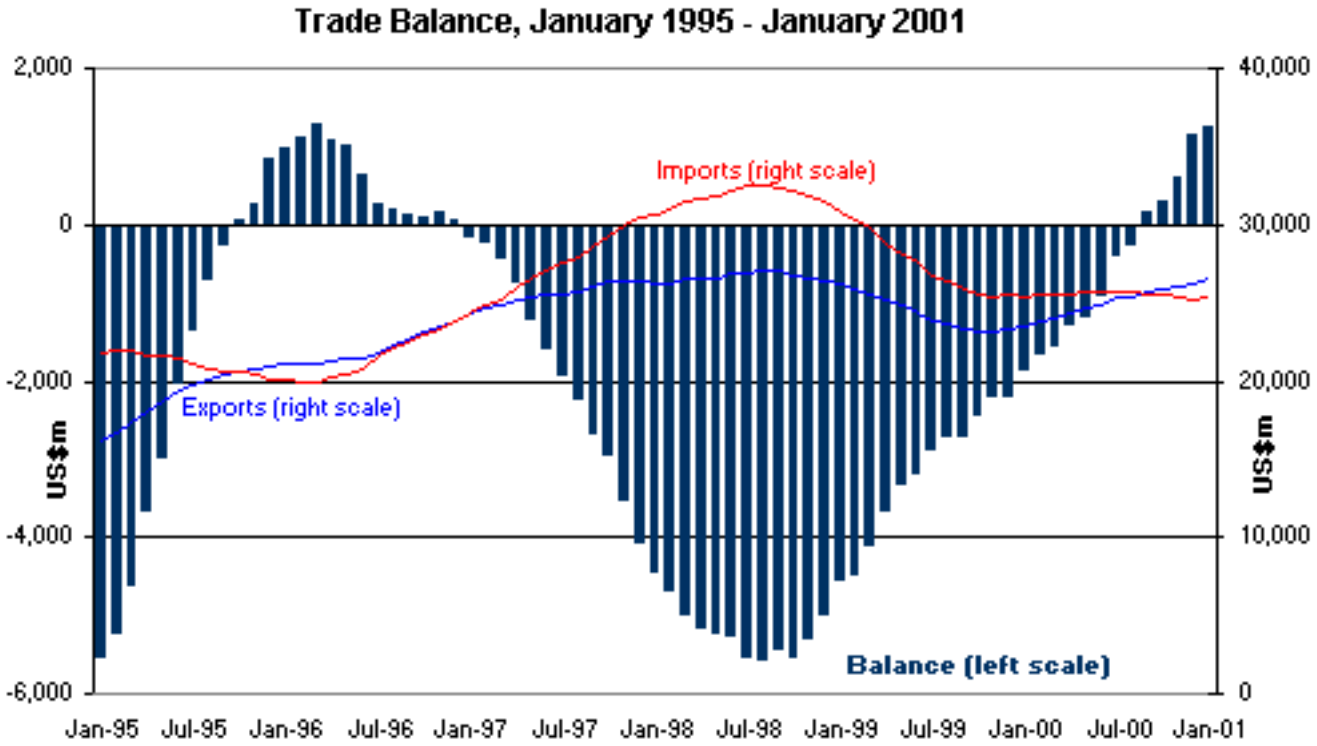
Note: Annual Variation in the Consumer Price Index (IPC) and the Producer Price Index (IPIM)
Source: Instituto Nacional de Estadísticas y Censos and LatinFocus calculations.

External Debt



External Trade

- (as one can see, Brazil's devaluation in early 1999 severely affected the Argentine trade balance)



Source: Instituto Nacional de Estadísticas y Censos.
Note: Trailing 12 months values.

Personal Taxation

Income Tax Rate (%)	35
Capital Gains Tax Rate (%)	0
Personal Assets Tax Rate (%)	0.5 - 0.75
Estate and Gift Tax Rate (%)	0

-

Corporate Taxation

Corporate Income Tax Rate (%)	35
Capital Gains Tax Rate (%)	35
Branch Tax Rate (%)	35
Withholding Tax * Effective Rates (%)	
Dividends	0
Interest foreign bank loans	15
Interest loans (non banks)	35
Royalties from Patents	28
Foreign consulting	21
Net Operating Losses (Years)	
Carryback	0
Carryforward	5

* Final tax applicable only to payments to nonresidents.

Stock Market Activity

- MerVal Index within the last year (index value right scale)


660
640
620
600
580
560
540
520
500
480
460
440
420
400
380
Bloomberg, L.P.
Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar
2000
2001

Government Regulation & Policy

Contents:

1. Telecommunications - Background

In 1989 Argentina began the deregulation and "de-monopolization" of its telephone service with the privatization of the state-owned monopoly, ENTel. The market was divided between two companies- Telecom and Telefó nica -which have been in charge of the trunk phone network and basic telephone service in, respectively, the Center-to-North and Center-to-South regions of the country. These companies were allowed to hold a monopoly in these markets until November of 2000, when the Telecommunications Act of 2000 went into effect. But even before that time, certain measures of deregulation were put in place, such as allowing users to choose (albeit, between Telefó nica and Telecom), there long distance carrier. The companies were required to invest heavily, pledging to meet certain quality standards and service expansion goals. During that period, both companies have invested more than US$ 5 billion each.

The Argentine telecommunications market has grown dramatically in the last decade. Currently it involves more than US$ 10 billion a year in sales. The ratio of lines in service to 100 inhabitants rose from 11 in 1991 to over 21 by the end of 2000[1].

For the international voice and data traffic the government granted a monopoly to Telintar, a joint subsidiary of Telecom and Telefó nica. Besides supplying international service, other value-added services, such as data package transmission, automated teller machine communications, electronic mail, data banks, and similar services were offered by Telintar. Prior to the 1997/98 reforms, Telintar charged up to $32,000 a month for a 64 kbps international link. For the same bandwidth, the price today is approximately $2,000. However, compared with the price of international links available in a free-market environment, the price for an equivalent bandwidth is still six to eight times higher in Argentina.

Cellular Telephony

Until 1999 two separate bands have been established to cover the entire country for cellular phone service, and two companies were allowed to compete in each area. In the Greater Buenos Aires and La Plata area, the operating companies have been Movicom (operating since 1988) and Miniphone (a joint venture of Telecom and Telefó nica, operating since 1993).

In the provinces, the service began in 1993 with the establishment

of CTI, a company formed by US communications firms GTE and AT&T with the local Clarín and Benito Roggio groups. CTI was given a concession to supply cellular phone service in the two regions outside Buenos Aires and La Plata.

By the end of 1996 the government had made the decision to increase competition in the cellular telephones sector. However there were delays until it called for bids in 1998 to allow multiple firms to operate in the metropolitan area with the PCS system. Since 1999 four firms were allowed to compete in the Greater Buenos Aires and La Plata: Movicom, CTI, and the two companies in which Miniphone was split: Personal (Telecom) and Unifon (Telefó nica). The cellular market has also grown dramatically, from 15 thousand lines in 1990, to almost 4 million by mid 2000. This represents a penetration of about 10% of the total population. Some industry analysts expect the penetration to increase to 35% by 2004[2].

The New Players

The telecommunications market for national long distance calls was partially deregulated in 1999 and the whole market was be fully deregulated by November 2000, allowing the entrance of new companies to compete with previously established providers. Users will be able to choose for each call both local and long-distance carriers, using the multi-carrier system currently available in the USA or Chile. A total of 24 new licenses were issued, with the major players (Besides Telefó nica & Telecom)

being:

CTI (Majority shareholders: GTE, Clarín Group): Started out in the cellular business, now will be a player in the domestic long distance and the "pre-paid" card market. Is expected to invest $ 800 MM in the next 3 years.

DIVEO: (Majority shareholders: GS Capital Partners III, Alta Communications, Norwest Venture Capital, Newbridge Latin America Texas Pacific Group, OneLiberty Ventures, Booth American, English Cable Enterprises, Meritage Private Equity Fund, Columbia Management). Diveo is principally involved in the deployment and running of "Internet Data Centers" for web hosting and other IP based services. They can be visited at: http://www.diveo.com/html/english.html

MOVICOM-BELLSOUTH: This joint venture has was one of the first to offer mobile telephony. After the last deregulation in November, they too are offering local, domestic and international long distance. Other services include fixed and mobile Internet access, trunking and data services.

IMPSAT: This company, founded by the Industrias Pescarmona, has teamed up with British Telecom and launched an IPO raising $ 244MM in the NASDAQ (IMPT) stock exchange. Although they started as a company focused in the data services sector, they will be a player in the corporate voice market as well. They are building an extensive Backbone network to offer ATM, Frame Relay and IP services.

METRORED: Has been around since 1997, and is focused on data backbone services. This company is formed the Fidelity Investment Group and Colt Telecommunications group which operates in most Western European cities. To date it has invested total more than $100 MM. It plans to target the "full service" corporate voice and data markets, initially focusing in Buenos Aires and later the cities of Cordoba and Rosario. It pioneered the QoS concept with high speed ATM over Sonet technology in Argentina.

AT&T: This major player bought Keytech LD, and obtained licenses for a wide menu of services, ranging from local, domestic and international long distance to data and internet broadband including fixed wireless technology. It has invested almost $ 100MM to date, mainly in backbone and switching infrastructure.

TECHTEL: (Share holders: Telmex: 60%, Techint: 40%) Started as data centric services company and have expanded to a wide array of other services, including local and long distance voice and video. Techtel is in the final stages of deploying a fiber-optic backbone loop, joining the cities of Buenos Aires, Có rdoba, Rosario, La Plata and Mendoza. It has begun operations in Mar del Plata, Bahía Blanca y Neuqué n.

I-PLAN: Provides high speed Internet and Data services since September of 2000. They have also obtain licenses for local and long distance telephony services in the Buenos Aires greater metro area, targeting mainly enterprise markets.

Foot notes:

1. "Informe Especial – El Nuevo Mercado Telefonico" by Nicolas Elebi Ramo. www.angelfire.com/ar/estadodesitio/informe1.html
2. Eduardo Griffa – Vice President, Marketing and Communications, Ericsson, Argentina. www.connect-world.com

2. Telecommunications Act of 2000

The link below leads to the Telecommunications Sub-ministry and the corresponding telecommunications act promulgated in November of 2000. The Linked Document is in Spanish.

http://www.secom.gov.ar/normativa/d764-00/decreto.htm

3. Analysis and repercussions of this Act

Interconnection Costs

One of the most significant outcomes of the deregulation is the drastic reduction of the prices of access to the public network: from US$ 2,15 cents to US$ 1,1 cents per minute. These prices were the results of an average calculated from the values in a group of selected of countries.

However, they were fixed through the long term increasing costs (CILP) method. This procedure was established in the previous regulation, but had never been applied. Hypothetically with the CILP method, the reference prices could be lower.

In order to calculate the CILP, the costs of an efficient operator's network must be taken into account, and the use of the Hybrid Cost Proxy Model was established, a computer technology program developed by the United States Federal Communications Commission (FCC).

Various articles have come out regarding the impact of last deregulation effort by the Argentine Government. Because of the temporary nature of many of the pages, we have opted to "cut and paste" the articles rather than linking to the site. Some articles may be in Spanish. We will be adding to this section as more news comes our way. Please check back.

Articles:

1. Opening in Argentina started yesterday – but with regulatory gaps, Convergencia Latina, November 10th, 2000

2. Argument in Congress over the total opening of the Argentine market, Convergencia Latina, August 1st, 2000

3. Fewer obligations for corporate carriers to enter Argentina,

Convergencia Latina, July 27th, 2000

4. United States succeeded in achieving a "model" opening up in Argentina, Convergencia Latina June 22nd, 2000

5.

Opening in Argentina started yesterday – but with regulatory gaps
Convergencia Latina 10/11/2000

Definitions are missing for cross-connection, the radio-electric spectrum, number bearing, dialed multicarrier and the Regulation of the Universal Service, which is to begin governing in 2001.

The interconnection between fixed telephones and mobiles isn't resolved either. It was announced that rates will be revised, so that the prices of calls from fixed lines to cellulars aren't higher than calls between mobiles, but there are still no news on this matter. Another one of the new developments of this new regulation was the inclusion, as an ¨ essential facility¨ (those that can only be provided by the incumbents), to the disintegration of the subscriber's loop. This way, the incoming operators will be able to rent the link with which Telefonica and Telecom reach the subscribers to offer, through the same line, services like ADSL.

In order to define this interconnection's reference price, the Secretariat of Communications (Secom) must conform a work group, which will have 90 days to determine this. The result worries the incumbents, since it would leave their capillarity and their local telephone centrals at the new incoming operator's disposal.

Anyhow, Telecom already started signing those types of agreements

with Internet service providers (ISP), which derived to the presentation of the company Buenos Aires Musica before the Secretary of Defense of Competition (Secretaria de Defensa de la Competencia) because the regulatory indetermination forces them to delay the launch of their offer of functional music through the telephone line. The disintegration of the loop is a complex point and there aren't many countries in the world that apply this as to take them as a reference. In fact, the European Union began to regulate it just recently.

So far, the interconnection costs Telecom and Telefonica will charge to the numeric translation services (NTS), companies that offer dial up Internet access, audio text, and back charge, weren't resolved.

The NTS will be able to set their prices freely for each call made to their users and will pay interconnection to the telephone companies for the origin of the communication, meaning that the calls would not be property of the operators anymore.

Until the NTS isn't resolved, the only method available to access the Internet will be by dialing the 0610 characteristic, over which Telefonica and Telecom have exclusivity and that during the practice didn't represent great advantages for the user.

Other points that remained unregulated since 1998, and that affect the competition directly, are the numeric portability and the multi-carrier by call system for the choosing of a long distance operator.

The difficulties to reach a consensus between the operators over the mode of technical application of the facility, that would allow the user to keep his or her telephone number even if the user changes operator or if the user moves to another address, allow us to think that in Argentina there won't be any big changes concerning this matter, at least not until next year.

The local operators assure they're technically prepared to offer that,

because that is what was established in a 1998 regulation, but there's still no norm to indicate in what conditions. On the other hand, none of the new long distance carriers has yet requested the facility to Telecom or Telefonica.

To put it to work won't be automatic either. Companies must request it in each of the cities where they will operate and the process also requires all the centrals in the country to be reprogrammed so they can recognize the code that identifies the operator.

Also, in the new interconnection contracts, the incumbents specify that the invoicing by account and ordering of any service must be requested with 60 days of anticipation. This is a crucial solution for the multi-carrier since, otherwise, the long distance operators would have to issue their own invoices, maybe even for one call.

On the other hand, the fear of arrears is one of the main obstacles of the system. And it is still unknown if an independent administrator to keep track of the debtors will exist.

Also to be defined is if all the users will automatically be allowed to start using the services or if each user will have to request them. That last option is what most companies prefer, because it would require the least control of customers, although Telecom and Telefonica say that the implementation would take quite some time.

The Secom planned to call for a public hearing to find a consensual solution to the pending matters to instrument the multi carrier system, but this week has decided to replace it with a consulting mechanism. Consequently, nobody wants to say exactly when it will be in force and the other qualified sales channel is pre-subscriptions, a mechanism that requires an onerous person-to-person marketing, as for the big operators.

Nobody blames Telefonica or Telecom in the telecommunications sector, but the delayed ordinance with the new regulations that allowed to just initiate agreements amongst operators, in late September.

Argument in Congress over the total opening of the Argentine market
Convergencia Latina 1/8/2000

Incumbents, competitors, authorities, and trade unions marched before the Bicameral Commission for Privatization to share their opinions over the new telecommunications regulations. After navigating the differences among cabinet officials, the standards that will be in force in Argentina's total market opening will have to be approved by the organism composed of 12 senators and representatives with different political views, although divided equally between government party members and the opposition. During last week, a majority of the sector's players presented their arguments before congressmen, who will then emit their opinion which, although not necessarily partisan, could worsen the difficult relation between the government and the opposition headed by the Partido Justicialista (PJ). The conflicts between legislators and businessmen responded to a constant pattern. Those who back the government's party (the Alliance) spoke against Telefó nica and Telecom's executives; the opposition supporters questioned the Communications Secretary, Henoch Aguilar.

Operators first.

The first company to appear was Telefonica de Argentina, represented by its president, Carlos Fernandez Prida, and the company's general secretary, Fernando Borio. Prida criticized the unequal nature of the regulations, adding that rights are granted to incoming operators and obligations to the incumbents in a disproportionate way. He reiterated the metaphor of the "Frankenstein" model, discrediting the rules

proposed because "they were constructed from fragments" of foreign regulations. Borio focused on interconnection prices - one of the central points being discussed – and surprised his listeners by sustaining that the U.S. Justice Department had declared it unconstitutional to determine these based on long term incremental costs, since the process violated property rights. Later, Telecom's vice-president, Guido Salerno, described the new standards as the ideal liberalization program, fully competitive but with no real country in which to be carried out. The Italian executive warned that the Argentine market could cannibalize itself through an inordinate effort to reduce rates, just as it happened in Chile, where only three operators where left with 80% of the market. In turn, Movicom-BellSouth pleaded for the new multiservice licenses to not become effective immediately. The new regulations proposed by the government establish a unique national license that includes local telephony, long distance, Internet access, and data transmission. Whoever obtains it will be able to use it as of November 2000. Roberto Pérez, Movicom's Executive Director and head of External Relations, estimated a period of five years was needed before license convergence. The company controlled by Bell South, which already offers long distance service besides being a mobile operator since 1989, formed a society with a dozen cooperatives to be able to operate fixed voice services in the mean time, as allowed by current regulations. On the other hand, CTI (GTE and Grupo Clarín) opposed the contribution amount for Universal Service (US), foreseen as 1% of net sales, since the previous administration had set it at 0.6%, with yearly increases of 0.1%, until it reached 1% in 2004, a date on which – in compensation – the control and verification tax, currently at 0.5% of net sales - would be eliminated. In the regulations being debated, both taxes would be maintained.

The Secretary´s response.

In the second round of citations, the Secretary of Communications responded to the operators' complaints point by point, focusing on

topics referring to interconnection and licenses. Aguiar corrected Telefó nica's Fernando Borio, pointing out that the United States Supreme Court made clear that costs must be calculated not based on the latest technology available, but rather on the most efficient. In fact, it was the U.S. Court of Appeals Court, which stated that costs cannot be calculated on a basis of a hypothetical company who uses the latest technology available in the market, but rather they should be considered on a real company operating the most efficient network. Aguiar also affirmed that, by November of 2001, communications costs in Argentina will be similar to Chile's costs, one of third of what they are now in Argentina. Regarding the thorny issue of Universal Service, he contrasted, for example, that with the current legislation there are places in the province of La Pampa that lack basic service and public telephones, causing PJ representative Manuel Baladron, a native of that province, to predict that there won't be any competition where there is no market. Aguiar and Baladron had already discussed this in June, after their return from the visit in which President Fernando De la Rua presented his telecommunications plan in the United States, to assure investments once the market is open.

To lessen the impact due to the drop in interconnection costs, set at US$ 0.011, the Secretariat of Communications stated that it will exempt Telefó nica and Telecom from having to pay the US contribution in areas with teledensity below 15% and outside their original area, or in those areas where they lose, due to competition, 20% of the lines in the original concession area. In this way, the fund for US would be around US$ 10 million.

Next up: Competitors, cooperatives, and trade unions

The manager of Institutional Relations for MetroRed, Martin Kaindl, spoke in representation of the incoming companies. He mentioned his general agreement over the new regulations, although he objected to the excessive benefits given to the incumbent operators in the form of

Universal Service contribution subsidies. The cooperatives, represented by Jorge Korolkov, vice-president of the Federation of Telephone Cooperatives, reiterated the historical claim that seeks authorization for these entities to offer radiotransimission and cable television services, a topic that isn't included in the market deregulation standards. The cooperative's leader explained that the situation discriminates against the companies he represents, and also requested the opening of zonal PCS bands. At the same time, he considered interconnection prices low and felt this could threaten investments. And last, trade unions showed different points of views, which reflected their own internal divisions. Rogelio Rodriguez, National Secretary of the Federation of Telephone Employees and Workers of the Argentine Republic (Foetra), demanded the incorporation of a labor chapter into the regulations to avoid endangering the job supply. At the same time, he criticized the freedom granted to the newcomers, positioning himself alongside Telefonica and Telecom. On the other hand, Claudio Martin, Adjunct Secretary of Foetra's Buenos Aires Trade Union, pointed out that since the privatization of state-owned Entel, membership has dropped 50% and that now, between Telefó nica and Telecom, there are around 10,000 employees. Martin disbelieves the official estimates that talk about the creation of 15,000 jobs, and conceptualized that the official view suggests a "trickle-down" of technological and economic benefits that will fall upon the entire population, but doesn't explain how that will generate employment.

Fewer obligations for corporate carriers to enter Argentina
Convergencia Latina 27/7/2000

Secom created a one and only license for all telecommunication services, but until June 2001, the incoming operators must invest a minimum of US$ 2 per inhabitant of the area where they are to work.

With the objective of calming down any avoiding complaints by already

established operators –Telefó nica and Telecom- who rejected outright the strong opening attitude by the Communications Secretariat (Secom), in terms of Universal Service, the License regulations sent to the Bicameral Commission for Continuation of Privatizations are composed of some clauses that tend to avoid ¨ a market skim¨ . The requirement of a minimum investment of US$ 2 per inhabitant for each area where new players start off in the competition, will be in force for one year from the Regulation approval and a US$ 30 million floor is expected for a new fixed telephony license holder in Buenos Aires (AMBA- Capital Federal and surrounding areas), and one of US$ 2 million in the province of Cordoba. As arranged, a new time limit for the total opening of this service was implicitly established, in this way assuring an additional return on telephony networks investments made by established license holders. According to Communications Secretary Henoch Aguiar, this approach was designed to ¨ stop an avalanche of new carriers¨ that would saturate the dominant operators' networks. The Secretary considers that now, in the first phase, large companies will enter and within a year ¨ neighborhood outreach¨ projects.

This new regulation also changed the coverage goal of 35% of the local area, as initially proposed, to an investment compromise. By removing the emphasis on territorial expansion, it will allow companies to construct higher quality networks in more concentrated market niches, an important factor since new competitors aim towards the corporate market.

The remaining services, without initial investment requirements.

The limit, on the other hand, will not affect the remaining services mentioned in Secom´ s License Regulation (data, Internet, and long distance). For these, the petitioner will have to state the services to be offered, a time line describing the growth in its network infrastructure for the first three years, the geographical coverage forecast, and an investment plan for that period of time - but with no obligations

regarding its effective completion. This flexibility makes Telefonica and Telecom doubt about the US$ 5 billion in investments announced by the Secretary. Those who oppose the proposal sustain that it will affect those who invest in the network installation. They also argue that any corporation, by just obtaining a license, would be entitled to request network infrastructure and charge for interconnection for incoming calls. This way their communication costs would be compensated without having to pay a single dollar. Not only would this affect both of the already established companies, but it would also would close the doors for other companies. They also criticise the ¨ rate freedom¨ for multiservice licenses. They sustain that without the obligation to invest, an operator that only rents the infrastructure can lower the market prices until it accomplishes its profitability goals and then leave. Telefonica warned, ¨ if they want us to go under water, we're going to win because we have the largest lungs¨ , and they point to Chile, where a price war reduced the market to a few companies who then raised prices again. On the other hand, Secom declared ¨ technology freedom¨ , clearing the way for data providers to offer voice services over IP (Internet Protocol). In this way, whoever offers local telephony service through this route, will only have to pay US$ 2 for each of the area's inhabitants during the first year of the regulation's validity.

Lack of rules for radiotransmission.

In any case, service convergence is not yet complete. A new law for radio broadcasting that enables telephone companies to enter the market through electronic means, is still to be completed. With what has been agreed so far, cable television operators will be able to offer telecommunication services, but the opposite – theoretically - is not allowed. This decision is to be taken by the Federal Radiotransmission Committee, even though the Communications secretary is already in favor of the authorization for telecommunication companies to begin radiotransmission when the CATV provider in their jurisdiction reaches a certain percentage of voice penetration.

Universal Service.

At the same time, to favor the expansion in less populated areas, Secom eliminated the obligation to pay a 1% contribution for ¨ universal service¨ and 0.5% tax for control, inspection and verification of Internet access and local fixed telephone service providers that operate in local areas with teledensity below 15%. This measure, includes Telefó nica and Telecom, but only outside of their original areas. Another one of Secom´s changes was the elimination in the ¨ personal and corporate participation¨ requirement of 10% national ownership for general telephony license holders. The Infrastructure Ministry added the declaration of ¨ minimum ownership¨ as a condition for obtaining licenses, even though they didn't determine the amount required.

United States succeeded in achieving a "model"opening up in Argentina

Convergencia Latina 22/06/2000

The pressure of the U.S. to reduce interconnection prices and to minimize universal service fees in Argentina defeated the traditional influence of Telecom and Telefó nica.

Full competition in that country will start as of November of this year. The two operators, which have maintained the basic monopoly in the northern and southern areas of the country during eight years, had managed to impose on the former administration a call completion price of US$ 0.0215 for the opening up of the market. To have an idea about this figure, FCC intends to report Telmex before the WTO for a price of US$ 0.0165.

The new Argentine administration, which took over in December 1999,

had promised full competition by changing these interconnection conditions. The champion of this approach is Secretary of Communications Henoch Aguiar, the telecommunications expert attorney who has most fought the dominant practices of the telephone companies during the post-privatization decade. FCC's chairman, William Kennard, praised Aguiar's favorable attitude towards competition, who advocates for U.S. companies planning to operate in his country.

Disputes within the administration

Nevertheless, his secretariat reports to the Ministry of Infrastructure, led by Nicolas Gallo, who has raised the funds for president Fernando De la Rúa's presidential campaign and has thus become De la Rúa's right hand. During his former role as "campaign coordinator", Gallo strengthened bonds with Telefó nica and Telecom, two of Argentina's most powerful companies. And during the few months of the current administration, he has been in charge of representing both companies' positions facing the soon to come deregulation stage.

The confrontation between Gallo and Aguiar soon came up. With the economic recession suffered by Argentina, the billions of dollars intended to be invested in the telecommunications sector because of the opening up of the market, were a determining factor for Aguiar to persuade president De la Rúa to have the new market regulation ready, which is favorable to new entrants, before the country's top authorities started with the road show scheduled from June 12 through June 15 in the United States.

Fearing the influence of the incumbents via Gallo over the decision of these regulations, the local representatives of the following U.S. companies GTE (CTI), BellSouth (Movicom), Madison Dearborne Partners (iPlan Networks), Comsat, Nextel, PSINet, VeloCom, Global Crossing, Diveo and Fidelity (MetroRed) joined forces three days

before that trip to warn about possible maneuvers to increase the Universal Service share which would benefit Telefó nica and Telecom.

The U.S. lobbying efforts were also exercised through their diplomatic representatives and accomplished its effect: the weekend before the trip, Aguiar passed the regulation for the opening up of the market, which reduces the requirements to get a telephone license, reduces the interconnection price to US$ 0.011 and maintains universal service at 1% of the total sales, contrary to the 4% intended by the incumbents.

Aguiar expected these regulations to be passed via an executive decree, but Gallo managed to stop that initiative until both his Ministry and the Ministry of Economy are consulted. And instead of a decree, Aguiar succeeded in getting an "executive order" issued by De la Rúa, a measure with no normative value that requests those agencies to state their opinion about those regulations within 30 days, due on July 9.

The presidential commitment

The possibility of Gallo modifying the regulations raised great concerns among the U.S. companies. Executives expressed their concern during the formal dinner with the Argentine president at the Embassy of Argentina in Washington on June, Tuesday 13. At that dinner, De la Rúa had to assume the commitment of giving his support to Aguiar's regulations, and he personally gave out a diskette with the regulations text to each one of the guests.

To put further pressure, during a seminar held in the American Chamber of Commerce the following day, William Daley, head of the U.S. Department of Commerce, gave the Argentine government a list of potential investments to be made for US$ 4 billion provided the regulations released during the visit were materialized.

Upon the delegation's return from the trip to the U.S., the disputes between secretary Aguiar and minister Gallo intensified. Although few

people think that De la Rúa may not live up to the commitment assumed in the U.S., the possible modification of the regulation suggested by the Minister of Infrastructure to the CEOs of the future competitor companies in the basic services market during a meeting called the very day he returned to Buenos Aires, arouse new fears in those companies, that publicly refused to discuss any kind of changes in the regulation with this government official.

A shift in hegemony

The concern of new market entrants is more related to the historic influence of Telefó nica and Telecom over the different regulators of the sector since its privatization rather than to Gallo's incidental attitude. There have been ministers, secretaries, congressmen and senators among their spokesmen. Some of them have passed rules in favor of those companies' interests and others have overlooked their failure to comply with certain issues.

Nevertheless, the increasing landing of U.S. companies looking for large-scale operations has changed the ratio of forces. Buenos Aires is one of the ten largest markets outside the United States because of the size of its population and its GDP per capita. Attracted by Internet's potential and the free allocation of tens of wireless broadband frequencies, more than 20 U.S. companies are starting up to provide voice and data services.

Beyond the modifications that might finally be made, the new regulation marks the hegemonic victory of the United States, which had lost when faced with Spain, France and Italy in the development of the telecommunications area in Argentina. As a trophy, Daley and Kennard will be able to show the "model" in their crusade against Telmex and the Mexican authorities.

Government Policy on the Internet

In general the policy of the Argentine Government towards the Internet has been one of active participation, yet attempting to stay away from interventionism. The concept of Universal Access, originally drafted for provision of telephony services, has expanded to include the Internet. What follows are several articles that exemplify and analyze the Argentine Government's Role in matters of the Internet. As articles come up or are uncovered, they will be posted on this page.

Selected Articles:

1. The Internet in Argentina: Study and Analysis of Government Policy, Thierry Chaumeil, June 1999
2. The Regulation of Internet in Argentina, Hector Huici, October 2000
3. El Comercio Electró nico: Aspectos Jurídicos, Lisandro A. Allende, October 2000

The Internet in Argentina: Study and Analysis of Government Policy

By Thierry Chaumeil
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As in the rest of the world, the Internet has found a receptive audience in South America. The firm Nazca, in a recently released document, says that although South America currently has only 8.5 million Internet users, usage of the Internet increased by 788 percent from 1995 to 1997.1 It also speculates that the number of Latin American Web sites soon should reach 500,000, and the number of users, 34 million. PricewaterhouseCoopers is calling Latin America "the next frontier on the Internet.2

The trends are registering in Argentina, where the number of Internet subscriptions is growing at a high rate. Recent figures provided by the Argentine secretary of communications indicate that the number of commercial Internet accounts grew 100 percent during the past year.

However, behind the percentage points and forecasting is another story of the Internet in Argentina. At the end of 1998, only 230,000 people had Internet accounts,3 of which 40-50 percent were connected through academic institutions. Commercial subscribers, whether individual or organizational, represented only 120,000 accounts, making for a total population of approximately 35 million people.

It is worth mentioning that Internet subscriptions often are shared between several users or families of users--which means the actual number of people with access to the Internet is higher than the number of subscribers--but the number of Argentine Internet users remains relatively low--far from the connectivity goal of 20 percent of the population4 put forward by professionals and well under the forecasts of pessimistic analysts who

believe the market in Argentina is at about 900,000 subscriptions.

The Argentine government is well aware of the need for its citizens and businesses to become part of the global information society, and important efforts are made to reach that goal. However, the disappointing development of the commercial Internet in Argentina leads us to point out the reasons for such failure that, in turn, will help us understand why the government's efforts are not yet crowned with success.

OBSTACLES TO DEVELOPMENT OF THE INTERNET IN ARGENTINA

Development of the Internet in Argentina is impaired by two categories of obstacles. The first set of obstacles is societal, and it is linked to Argentina's status as an emerging economy and thus can be remedied only in the long term. The second obstacle is the Argentine telecom legal framework, which can be modified easily in the short term.

Societal Factors

With a per capita gross domestic product (GDP) of $9,071, Argentina is the richest country in Latin America, surpassing Brazil, Chile, and Mexico.5 However, the global wealth of Argentina remains far behind other, more advanced countries such as those of the European Union, whose per capita GDP reached an average of $21,873 in 1996.

Although it has been growing at an impressive rate since the early 1990s, Argentina's economy remains fragile. The rate of unemployment is high--at about 14 percent--and the external public debt of the country still strongly limits the government's budgetary freedom.

The status of the emerging economy of Argentina has direct and indirect adverse effects on development of the Internet in the country.

- Direct obstacles

The first direct obstacle is the ability of the people--either economically or technically--to actually access the Internet. For example, the average monthly per-capita wage in Argentina is $500, whereas the price of the least expensive computer is about $1,000. The ratio of telephone lines per inhabitants is 18.9 percent,6 which is low compared with more advanced countries, where it is usually well above 50 percent.7 In addition, in spite of the telcos' efforts in the past few years, available bandwidth remains insufficient due to underdevelopment of the telecommunications networks.

The second direct obstacle to development of the Internet lies in the capacity of the people to manage and take advantage of new technological tools. People must receive proper training to gain the minimum required skills. As a point of comparison, on average, whereas the most developed countries already spend $115,200 per year per pupil on education and training,8 the Argentine state spends only $12,966. There exists within the country a fear that future generations may not today be receiving the proper training to have access to--and take advantage of--the information society.

- Indirect obstacles

In order to truly understand the obstacles that are indirectly impeding growth of the Internet in Argentina, one must take into account both the absence of a developed Argentine capital market and the high cost of credit, both of which limit growth of technology start-ups.

If the U.S. technology-development model teaches us anything, it is that the success of the Internet is due in large part to the synergy between innovation and venture capital--or the ability to finance or find adequate funding for technology start-ups. In Argentina the dearth of financially strong technology start-ups may be at the heart of the slow growth of the Internet.

Argentine Internet service providers (ISPs) also are important to look at in an examination of indirect obstacles to Internet growth. In Argentina they are divided into two categories. The first is a group of five companies associated with the telcos or with important multimedia groups, and it has more than two-thirds of the ISP market. The other is a group of approximately 200 small ISPs, which share the rest of the market. Without proper financial backing, the small ISPs are not able to compete directly with the main providers because they cannot mobilize enough capital to either finance their growth or keep up with the constant technological change in order to provide state-of-the-art access to the Internet.

The access and cost difficulties that are keeping people off the Internet, combined with lack of proper financing for innovative technology start-ups, may explain why the number of Web sites featuring Argentine-specific content is low. The last available figures indicate there are only 4,000 Argentine Web sites.[9]

The flourishing of local content is critical to development of the Internet in Argentina, just as it is in any country. The absence of local content has a negative impact on the curiosity of the people and therefore limits their interest in the Internet as a whole. In addition, when desired information is available only in a different language, the value of the Internet as an information provider becomes limited. Finally, lack of region-specific content renders the country dependent on its international connections for access to information.

In many instances, however, those international connections are managed by a national telecom company, which traditionally enjoys a monopoly situation. As a consequence, prices are well above those market prices available in competitive systems. Thus, the state of telecom regulation in a country becomes a relevant factor in an analysis of growth of the Internet, and as far as Argentina is concerned, it certainly is one of the most important reasons for the limited development.

The Negative Impact of Telecom Regulation

- Argentine telecom regulation

Until the end of the 1980s, the Argentine telecom system was in the hands of a state-owned company called Entel. Plagued by inefficiency, overstaffed, and unable to provide the country with telecom facilities suitable for the needs of the citizens and businesses, the company was privatized by the government in November 1990.

For privatization purposes, Entel was spun off into two companies, each in charge of half of the Argentine territory: the North Company, including the northern part of Buenos Aires, and the South Company, integrating the southern part of Buenos Aires.

Following an international bidding process, 60 percent of the shares of the North Company were sold to a group of investors led by France Telecom and STET of Italy and later renamed Telecom Argentina (Telecom). Sixty percent of the shares of the South Company were sold to another group of investors, led by Telefónica de España, and subsequently renamed Telefónica de Argentina (Telefónica).

In exchange for their commitment to invest in modernization of the country's telephone system, the Argentine government granted the telcos a monopoly over basic voice telephony in their respective territories of activity. The government also granted a monopoly over international inbound and outbound data and voice traffic to a joint subsidiary of Telecom and Telefónica called Telintar.

The telcos' monopolies are scheduled to end on November 8, 1999, when the Argentine government will award two additional licenses for the provision of local, long-distance, and international voice services. One year later, three other licenses will be granted for the provision of local, long-distance, and international services. And it is not before November 2001 that the international telephone services will be totally liberalized.

As of today, Argentina's international connections with the rest of the world are managed by Telintar, which is in the process of being spun off between its two shareholders and already operates under the names Telintar Norte and Telintar Sur--known as the Telintars.

Under the privatization law, data services--including provision of Internet services--have been under a regime of free competition since 1990. That free-competition status is nonetheless subject to the obtaining of a prior license from the National Communications Commission and to the respect of Telintar's monopoly position as gatekeeper of transborder data flows. Since January 1, 1999, the international connections toward the countries of Mercosur[10] are totally liberalized.

As a consequence, and with the exception already mentioned, until further liberalization of the telecom services, the ISPs are not allowed to choose international-connection providers other than the Telintars.

- The negative consequences of a monopolistic regime

The ISPs' access to international connections is subject to the monopolistic behavior of the Telintars. Not surprisingly, the first consequence is the artificially high prices the Telintars charge their clients, the ISPs, which also suffer from limited access to international bandwidth.

Prior to the 1997/98 reforms, Telintar charged up to $32,000 a month for a 64 kbps international link. For the same bandwidth, the price today is approximately $2,000. However, compared with the price of international links available in a free-market environment, the price for an equivalent bandwidth is still six to eight times higher in Argentina.[11] The high prices prejudice not only the financial wealth of ISPs, which are obliged to limit their profit margins to offer Internet services at a price acceptable to the consumers, but also the financial wealth of universities and other nonprofit entities, which cannot afford the international bandwidth necessary for

their purposes.

The absence of competition at the local level is also prejudicial to Internet development in Argentina, where the vast majority of users are connected through dial-up systems. The Argentine telephone system has not yet adopted a flat-fee system for local calls, which still are being charged on a pulse basis. The price of the pulse is 49 cents, and according to the hour of the day, a pulse corresponds to one to four minutes.

The monopolistic regime the telcos enjoy is also the source of various anticompetitive behaviors regularly denounced by the ISPs. For example, the telcos are prohibited from participating in activities other than basic telephony. However, they created subsidiaries with adequate financing, technology, and personnel skills dedicated to the provision of Internet services against which the smaller ISPs are not able to compete. More generally, in their relation with the powerful telcos, the small ISPs complain that they do not enjoy the same treatment as that granted by each telco to its in-house ISP company.

As mentioned earlier, the Argentine telecom legal framework was designed in 1990 for the purpose of privatization of the state-owned telecom monopoly. The Internet and all of its applications certainly were not contemplated by the regulator back then. The Argentine telecom legal regime is a rigid framework based on a contractual guaranty granted to the telcos that their monopoly will be protected over a certain period of time. As of today, that rigid structure is not adapted to development of the Internet and can even be considered as counter-productive for two reasons. First, the monopoly of the Telintars triggers artificially high prices and unnecessary limitation of bandwidth. Second, the monopoly over basic voice telephony enjoyed by the telcos prohibits the growth of Internet telephony.

It is understandable that in consideration for their investment, the telcos' privileges had to be protected, but that protection--already considered by

many experts as no longer necessary--turned out to be an important obstacle on the way to growth of the Internet, and it presents a threat to integration of Argentina's citizens and businesses into the new global information society.

The obstacles mentioned earlier were among the problems brought to light at the First National Hearing on the Internet held on August 6, 1997, and strongly criticized again at the Second National Hearing. In the aftermath of the First National Hearing, the Argentine government defined more clearly the scope of its global policy toward the Internet and took several measures designed to encourage its growth.

THE ARGENTINE GOVERNMENT'S INTERNET POLICY

The Argentine government's policy toward the Internet is based on two declarations of principles and is organized around three axes: constant monitoring of the Internet, enactment of specific regulations and the implementation of programs designed to help the growth of the Internet, and reflection over the future challenges.

Two Declarations of Principles

The first declaration is that the Internet is a matter of national interest.

Decree 554/97, dated June 19, 1997, declares of "national interest the access to the Internet by the Argentine people, in equitable social and geographic conditions, with reasonable costs, and with quality standards in accordance with modern multimedia applications."

The decree also entrusts the secretary of communications (SECOM) with broad powers to:

- develop a strategic plan for expansion of the Internet in Argentina that achieves several public policy objectives, such as creation of Web sites for Argentine public libraries, promotion of access to the

Internet by the educational system, and promotion of a national telemedicine network
- analyze incorporation of the Internet within an analysis of the definition of universal service
- analyze and propose alternative price policies in order to stimulate and diversify use of the Internet
- encourage use of the Internet to support activities related to education, culture, information, entertainment, and health

The second declaration says regulation of Internet content should be hands-off. The Argentine government took note of the 1997 U.S. Supreme Court decision of Reno v. ACLU,12 in which the Court held that the federal statutory prohibition of so-called indecent language on the Internet violates the freedom-of-speech protection guaranteed by the U.S. Constitution. Thereupon the Argentine government adopted a liberal position regarding the content of information available on the Internet and access to that information by users.

Presidential decree 1279/97, enacted November 25, 1997, states that the Internet is a valuable modern medium allowing the mass diffusion of ideas. Therefore, the government expressed its wishes to assist and participate in development of that medium--especially by removing the barriers prejudicing its growth. It also expressed its refusal to interfere with the production, creation, and diffusion of the information circulating via the Internet.

Decree 1279/97 also states that the Internet is a medium protected by the provisions of the Constitution that have to do with the freedom of expression--like the press, radio, and television--and, as such, shall not be subject to prior censorship or restriction.

In consideration of decree 1279/97, resolution 1235/98 dated May 22, 1998, requires ISPs to insert the following text into invoices sent to users: "The National State does not control or regulate information available on

the Internet. Parents are recommended to exercise reasonable control over the content accessed by their children. It is advisable to consult your ISP to obtain suitable advice on programs designed to prohibit access to undesirable sites."

Monitoring the Internet

The SECOM tries to obtain continuous feedback from the country's Internet users as well as its Internet professionals. As part of that effort, resolution 81/96, dated September 6, 1996, created the Internet Commission, in charge of drafting the regulatory framework of the Internet. The commission "takes into account" the opinions and advice of interested professionals.

There also has been established National Internet Inquiries, which are directed toward individual users of the Internet. The inquiry consists of an online form, available on the secretary of communications' Web site,13 listing approximately 50 questions that address access to and use of the Internet by each individual. The secretary of communications currently is conducting the Second National Inquiry.

Partial statistical results of the Second Inquiry, based on 4,384 forms submitted from May 29 to June 16, 1998, were recently made available to the public.14

In addition, the SECOM organized two National Public Hearings on the Internet that took place August 6, 1997, and September 24, 1998. The hearings brought together panels composed of authorized representatives from every sector associated with the Internet, such as the telcos, the ISPs, the universities, the government, the provinces, and the users. The first hearing provided the government with useful comments and information on the state of the Internet in Argentina and served as a starting point for the wave of subsequent reforms initiated by the SECOM.

Regulations and Programs Designed to Help the Internet Grow

Taking into account the obstacles to development of the Internet brought to light by the First National Hearing, the SECOM enacted several regulatory provisions and set up several public utility proj-ects in order to facilitate access to the Internet by the largest number of people.

- The Internet Regulatory Framework

From 1997 to 1998, the SECOM approved several regulations that, taken as a whole, constitute a comprehensive regulatory framework.

1. Reduction of costs of connecting to the Telintars

With the goal of bringing the costs of international connections to a level closer to the standards applied in comparable or more advanced countries, resolution 2765/97 of September 17, 1997, imposed on Telintar a reduction of approximately 50 percent of its prices billed to the ISPs for international connections.

2. Decrease of dial-up connection costs

Resolution 2814/97 dated September 18, 1997, established a special, dedicated number--0610--named Call Internet, through which telephone calls between the end user and ISPs are dialed.

By means of connection of the ISPs via that number, users may save up to 50 percent on their dial-up cost.
The resolution also establishes a Register of International Connections Requests to monitor strict compliance with its terms.

By means of resolution 499/98, dated February 20, 1998, the SECOM approved the current promotional scheme of tariffs proposed by Telecom and Telefó nica for dial-up connections between Internet users and their ISPs via the 0610 number. The prices--in force until January 1, 2000--

apply to the whole territory of Argentina. Schools, national universities, and popular libraries benefit from an additional discount of 50 percent.

Resolution 1617/98, dated July 13, 1998, obliges ISPs to send to all clients an e-mail message informing them of the existence of the 0610 number and its corresponding discount. The resolution also creates a database register of 0610 number requests submitted by schools, national universities, and popular libraries.

3. Contractual relations between ISPs and telcos

ISPs and the Telintars: Resolution 97/96, dated September 16, 1996, obliges Telintar to provide international Internet access connection for every ISP requesting such service.

Resolution 194/96, dated November 7, 1996, adds that Telintar must provide international Internet access pursuant to the technical conditions requested by the ISP, provided they are reasonable, technically feasible, and adequate for development of the ISP's services.

Resolution 194/96 also indicates that the ISP applicant is free to ask for a transparent, exclusive, and dedicated link and that it is not necessary to be an actual holder of a license to start negotiating with Telintar.

ISPs and Telefónica/Telecom: The aforementioned resolution 499/98 approved a document called Access to the Internet, which is the model contract that must be used between the telcos and the ISPs until January 1, 2000. The two-page document defines the economic and technical relations between the parties, such as prices of lines, conditions of interconnection in the metropolitan area of Buenos Aires, and the offer of migration from analog to digital lines.

- Public interest projects

In the past few months, the government has taken several initiatives to

develop the Internet in areas considered important to the country.

1. Access to Internet through nonprofit services

By resolution 1246/98, dated May 22, 1998, the government gives the opportunity for any governmental or nongovernmental organization to provide Internet access services when such services are provided without intention of profit.

2. The Internet 2 Argentina project

Inspired by development of a high-speed data network in the United States called Internet 2, resolution 999/98, dated April 6, 1998, approved development of a similar network called Internet 2 Argentina.

Pursuant to the resolution, the new network will have educational and scientific purposes and will be oriented toward development and use of advanced applications for scientific and technologic research, academic activities, telemedicine, and multimedia digital libraries. The technology standards used will correspond to those elected by the most advanced countries for their scientific and academic networks.

This resolution also establishes the Committee for the Promotion of the Consortium Internet 2 Argentina in charge of implementing a pilot program.

Resolution 1550/98, dated July 13, 1998, creates the General Coordination Board of the Committee for the Promotion of Internet 2 Argentina. The board is in charge of several organization, promotion, and administration tasks, including negotiations with the U.S. Internet 2 network.

The General Coordination Board will be composed of various persons appointed by the resolution itself, a representative of the minister of culture and education, and individuals representing public and private universities,

centers for scientific research, telecom companies, and computer companies.

3. The telemedicine project

Resolution 1357/97 creates the telemedicine area in order to drive nationwide development of experimental applications of the Internet in the field of telemedicine. The project consists in the connection, through videoconference systems, of several main hospitals and medical schools in isolated locations in the country.

The experimental network, based mainly on integrated-services-digital-network (ISDN) technology, contemplates both educational and practical, real-time telemedicine applications.

4. The argentin@internet.todos program

Decree 1018/98, dated September 1, 1998, sets up a program for the development of communications. It is called argentin@internet.todos and has a budget of 12 million pesos ($12 million).

The objectives of the program are:

- to promote development of the telecom infrastructure throughout the country in order to provide universal access to that infrastructure in equitable geographic and social conditions
- to stimulate development of national and regional telecommunications networks
- to promote universal access to the Internet and to information technology
- to promote, on a national scale, creation of community technology centers (CTCs).

The SECOM will be responsible for the planning, direction, and evaluation of the program--in coordination with the National Communications

Commission.

The SECOM also signed an agreement with the International Telecommunication Union for the study, design, execution, and administration of the first 500 CTCs. CTCs are technology units that are located in areas isolated from urban centers or those that have low-income populations. The units are designed to be public resources giving local citizens access to such services as e-mail, fax, teleconferences, virtual libraries, and public telephone.

At present, a handful of pilot programs already have been implemented. For example, the Villa Angelelli Program, near the city of Córdoba, provides a technology center with a virtual library, Internet access, and a videoconference system for a community of 500 people with low income, among whom 60 percent are children.

5. Internet in the educational system

Initiatives concerning connection of the educational system are, for the most part, under the responsibility of the Ministry of Education.

In 1994 the Ministry of Education implemented successfully the RIU[15] program linking Argentina's national universities through a dedicated network. Through that network, it is estimated that about 100,000 members of the academic community have access to the Internet, representing the largest group of Internet users in the country.[16]

Argentina's research centers also are connected together, and a project named Intersur currently is under development with the objective of linking the main research centers of the Mercosur countries.

It is anticipated that the Ministry of Education will release a project aimed at linking 44,000 Argentine schools--private and public--through the REDES network.[17] Such a network should enable users to take advantage of all of the education services available online and will be

managed at the provincial level.18 The SECOM also is developing programs with the goal of connecting public schools to the Internet for free.

In opposition to the rather disappointing growth of the commercial Internet, development of the Internet in the education community may be considered successful.

Reflection on Future Challenges

In the next few years, but to a certain extent already today, the Argentine government will confront new regulatory challenges concerning the Internet and, more generally, the ever-changing world of telecommunications, although some of those obstacles are not exclusive to the Argentine government and must be faced also by the world community as a whole.

Issues related to convergence of technologies

The main source of difficulty during the coming years will lie in the challenge arising from the convergence of technologies. The digitalization of every communications activity--voice, data, video, and audio--and the transmission of such information via any kind of media--copper line, fiber-optic, or microwave--eventually will blur the lines between the traditional communications businesses--phone, data transmission, audio, and video--because any communications operator will be able to provide a full panel of services.

As an example of that convergence, satellite digital TV recently entered into the Argentine market, and in order to prepare Argentina for the global transition from analog to digital TV, the SECOM organized a Public Hearing over terrestrial digital TV,19 which took place in Buenos Aires on September 22, 1998.20 The provision of Internet services by digital TV operators is among the critical issues concerning the new medium.

Another example of the difficulties triggered by convergence of technologies is the issue of Internet telephony, which is now provided by some operators in Argentina regardless of the monopoly over basic voice and international telephony held by the telcos. Except for the provision of article 8.1 of privatization decree 62/90 granting the above-mentioned exclusivity rights, no other regulation has addressed the issue. There is a good case to argue that IP telephony is not basic voice telephony and thus can be provided freely by ISPs without infringing on the privileges of the telcos over the traditional telephone business. Although one still may consider that the quality of Internet telephony is not yet good enough to compete directly with the incumbent telcos--and later with the new licensees--that moment certainly will occur sooner than expected.

- Electronic commerce

As far as electronic commerce is concerned--and in preparation for the Second National Hearing--a recent Communication from the Internet Commission[21] expresses an interesting opinion on how the Argentine government should consider and regulate commercial transactions over the Internet.

First, the commission indicates that the private sector should take the lead and suggests the government favor self-regulation of the industry.

Second, the commission states that the government should avoid unnecessary restrictions on electronic commerce, such as burdensome regulations, administrative paperwork, taxes, and tariffs.

Third, the commission declares that intervention by the government, when necessary, should be directed toward the drafting and enforcement of a simple, constant, and foreseeable legal framework.

Fourth, the government should recognize the unique features of the Internet, such as its decentralized nature and its bottom-up administration.

Finally, the commission indicates that electronic commerce on the Internet is based on a worldwide market and that no discrimination should be made pursuant to the location of the seller or of the purchaser.

For discussion purposes, the Internet Commission qualifies as an "important project" in terms of the model law on electronic commerce drafted in 1996 by the United National Commission on International Trade Law.

- Regulation of competition in the telecom sector

The regulation of competition in the telecommunication sectors is another issue faced by most of the countries in the world, especially in the period of transition between the monopoly regime and the free and full competition between several operators of different size.

In Argentina the telecom sector traditionally is rooted into a monopoly regime and regulations always were directed at protecting it. From the 50-year monopoly of Entel until the period of exclusivity enjoyed by the telcos, the telephone system never has been the subject of competition. On the contrary, data have been subject to competitive status since 1990. Another characteristic feature of Argentine legal framework is the absence of a developed antitrust law. In order to remedy that absence, resolution 1460/98, dated July 3, 1998, issued a consultation document on restrictive commercial practices with a view toward designing a regulatory framework of competition in the telecommunications sector.

- Universal service

The definition and the financing of universal service raise a number of issues in various countries and in Argentina as well, where problems are more acute than in the most advanced countries because the relative number of Argentine people who don't access to telecom services is substantially higher.

Resolution 1250/98, dated May 22, 1998, issued a consultation document on universal service, but as of this writing, the Argentine authorities have not made a decision on the question.

ANALYSIS OF GOVERNMENT'S ACTION

The Second National Hearing on the Internet held in September 1998 provided the government with some interesting feedback on reforms introduced in the previous months.

As far as the 0610 number is concerned, on one hand, several speakers were of the opinion that that measure favored mainly the telecom operators because it expanded the average duration of navigation time on the Web, but did not result in a substantial increase in new users. On the other hand, figures show that in the past months, not only did the number of users grow substantially, but so did the number of ISPs willing to enter the market. As of July 1998, 25 percent of current users had started to use the Internet in the previous six months[22] and 98 new licenses had been issued for the provision of value-added services after creation of the 0610 number, and 26 applications were pending.[23]

Other critics were to address the scheme adopted by the telcos to operate the 0610 number. The method implemented consists of dividing Internet utilization time in alternative sequences of 15 or 18 minutes each. The first sequence is billed at full telephone local price to the user, and the next is free. The scheme was designed to develop the average navigation time of users. However, an important number of Internet users are victims of frequent communications cuts that oblige them to redial to get access to their provider and to start another sequence billed at full price.

The general reduction and uniformization of costs throughout most of the territory also facilitated a geographic rebalancing of Internet access in favor of those living outside the city of Buenos Aires.[24] However, those

living outside the major cities do not yet have access to the 0610 discount and can be connected to the Internet only through expensive, long-distance telephone calls.

As already mentioned, ISP representatives vigorously criticized the behavior of the telco monopolies toward them as well as the frequent distortions of competition. They also complained about the high price of the rather scarce bandwidth and international connections.

The forthcoming liberalization of the telecom system, starting November 1999, will allow the entry of two new operators able to provide national and international services, thereby ending the incumbent two telcos' and Telintars' monopolies. Such competition should trigger (1) an increase in the percentage of lines per inhabitants, (2) an increase of available bandwidth at both the national and international levels, and (3) a correlative reduction in price for end users.

As far as network infrastructure is concerned, it is worth mentioning that Argentina possesses one the most developed cable TV networks in the world, and several alternatives to dial-up connections already are available to users.25 It also is expected that in the short to medium term, several international cable systems--such as Oxygen and Global Crossing--and satellite facilities projects--such as Globalstar, Iridium, Ellipse, and Teledesic--will be completed. Some of them are already operating and are resulting in expanding the bandwidth available to ISPs.

As far as education is concerned, although one should praise the efforts made to provide children with new educational tools, the dispersion of initiatives between the Ministry of Education and the SECOM may prejudice harmonious development of the system by triggering certain inconsistent budgets and technology overlaps. Such inefficient division among government services will needlessly direct limited resources away from the Argentine public school system, which remains plagued with basic structural deficiencies.

Regarding the community and other nonprofit programs adopted by the government in order to provide Internet services for free, it is necessary that they be managed with careful attention. Although they should be encouraged because they allow people with economic difficulties to have access to the information highway, in several cases these government-subsidized initiatives may generate distortion of competition to the prejudice of commercial ISPs.

CONCLUSION

The Argentine example shows that the Internet is not a communication tool successful by reason of its own virtue. Several key condition precedents must be met prior to witnessing Internet growth and widespread use among the population of a country--especially if that country lacks the technologic tools, the economic wealth, and the financial facilities that are common in either the most developed countries of Asia or Europe or, of course, the United States.

Argentina also is a case study of how an outdated telecom reg-ulation framework may exert a negative impact on the development of a new communication tool by maintaining artificial barriers, which were designed for other purposes, preventing the business community from providing the public with good services at an affordable price.

The Argentine government's policy also may be considered as a model--positive or negative--for other countries. The SECOM's action shows that an active policy toward development of use of the Internet doesn't guarantee success--at least in the short to medium term--because it cannot always eliminate strong economic, legal, or cultural obstacles.

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17. .COM, August 1998, p. 48.
18. Brazil and Chile also are in the process of developing similar programs named Proinfo and Enlaces, respectively.
19. SECOM, resolution 1945/98, dated September 4, 1998.
20. Minutes not yet available.
21. Annex to resolution 1616/98.
22. Second National Inquiry, www.secom.gov.ar/encuesta/enc-esta2_199807/indice.html.

23. Resolution 1616, Annex 1: Report from the Internet Commission.
24. Before creation of the 0610 number, 70 percent of Argentina's ISPs were located in the city of Buenos Aires. As of July 1998, 50 percent of them were located in the rest of the country. Resolution 1616, Annex 1: Report from the Internet Commission.
25. The Second National Inquiry indicates that cable-modem companies already hold almost 5 percent of the Internet service provider market. See www.secom.gov.ar/encuesta/encueta2_199807/indice.html.

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The Regulation of the Internet in Argentina

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The revolution that has aroused around Internet and the electronic commerce resembles, in some aspects, the fever for gold of the past century: only some people became rich finding the precious metal but many others enriched themselves selling pickaxes and shovels or by feeding the mine workers. Something similar happens nowadays with the phenomenon of the "portals" and the electronic commerce: many speculate with becoming millionaires overnight with their new projects, but the truth is that those who will win with this digital event, for sure, will be the software providers and those who provide telecommunications infrastructure used to transmit the information generated by different servers.

The transmission of said information is, precisely, what leads us to ask if an Internet access provider (usually referred to as ISP) is really a telecommunications service provider proper or is a content provider or something else.

To this end, we will have to turn to the definition of telecommunications and of telecommunications service. The first concept is defined by the Telecommunications Act Nº 19.798 (section 2º) as "All transmission, emission, o reception of signs, signals writings, images, sounds or information of any kind whatsoever, done by wire, radioelectricity, optic media or other electromagnetic systems". The second concept is defined in Entel's privatization specifications (Chapter XIX of Anex I of decree 62/90) as "The transport of signals, visual images, voice, music and other sounds through wires, radioelectric systems, optic

systems and/or other systems which use electric, magnetic, electromagnetic or electromechanical energy".

Thus, the action of transmitting is the one that determines that we are in the presence of a telecommunications' service. The Internet access provider is not always the one in charge of the task of transmission, which in many cases is carried out by another company. In these cases, I am of the opinion that the ISP is not a telecommunications service provider because he does not carry out the task that identifies this activity. The solution followed by the regulatory framework in force has been another one. It catalogues the ISP as telecommunications service providers and requires from them to obtain a value added service provider license in order to be able to develop their activity.

I find this requirement unnecessary on the lines of any legal disposition or even to ensure the right to access to the public telephonic network, through which many companies provide their services. To this end, the provisions established in section 13 of decree 731/89[1][1] and specially those, which, are established in section 12 of decree 1461/93[2][2] were enough. With a more recent date and with another rank we have the dispositions established by Act Nº 24.425, which approve the agreements of the OMC and especially its annex, which refers to telecommunications' services and was approved in Argentina by Act Nº 25.000.

Anyway, although it may sound absurd for those who do not use their own infrastructure, the fact of obtaining a license is not an excessively expensive burden, while it contributes marginally to increase the "argentine cost" 1. Neither do I believe that the late development that the access to Internet had up to recent times has been due to a defective regulation of the service itself, but to mistakes in the regulation of the telecommunications services which are their support and especially to the price of the international links 2 , provided under the monopoly regime till not so long ago and under limited competence until November 8th 2000.

The criterion that our country has adopted and has pursued up to now, is to classify licenses for the provision of telecommunications services by types of provision, that is to say, by types of service: telephony, mobile telephony, data, telex, value added, etc . . . In other latitudes and with a criteria according to the technologic evolution the licenses have been classified according to the scope of service (local or long distance) and/or to the imposed obligations (give or not public access to the network 3). The recent question summoned by Resolution SC number 170/00 to amend among others, the license regulation seems to imply a reformulation of that criterion so that it would be more in accordance with the reality of the technologic evolution 4. In fact, nowadays the digitalization has reduced everything to the transport of series of zero and one, which become sounds, data or images in the customers' premises.

Now then, ¿Which is the "label" that has been attributed to Internet within that classification?

Resolution of the secretary of Communications (SC) number 97/96 has determined that access to Internet providers should obtain a license for the provision of national and international value added services.

Value added services are defined in Resolution 1083/95 of the ex National Telecommunications Commission (Comisió n Nacional de Telecomunicaciones, CNT 5) as "those services that using networks, links and/or telecommunications services as support, offer facilities that distinguish them from the basic service, applying processes that make the information available, acting over it or even permitting the interaction of the subscriber with said information". Among them we find those for data base consulting, electronic mail, voice mail, fax and audiotex storage and retransmission.

To include Internet within this category, in the whereas of Resolution SC 97/96 it was held that the majority of the services provided through the Internet were those included in the resolution quoted in the preceding paragraph 6.

Now then, if the services have been considered within a competitive regime, their support infrastructure has not been considered in the same way. In fact, the same resolution CNT 1083/95 had already established that the international links for the provision of international value added services should be provided exclusively by TELINTAR [7] according to the rights granted in point 9.2 of ENTel's [8] privatization specifications.

One of the clauses of Resolution SC 194/97 needs an individual analysis. This clause established the obligation of the value added service providers to inform their clients in their contracts that the service could not be used for telephony, data transmission and teles [9] . The reason for this is that said services, in the international scope, were, at that time, under an exclusivity regime [10].

However, I believe that the rule surpasses what is provided by the legislation and that only the limitation on telex and data transmission in the international area was legal. In the national area, only the restriction on live voice was legal. This obviously sets up control difficulties from the moment that the network can communicate users not only within but also without the country. Besides, we have to keep in mind that it is a right of the licensee to use the means for the provision of all those services for which he have a license and at this point there would arise some kind of confusion between the means used indiscriminately to provide services within and without the territory subject to a different regulatory system. This without prejudice to remember that the licenses allow only the provision of the services included in them [11].

Special bewilderment is caused by the mention of the impossibility of transmitting data, because the information that circulates through the Internet is, in its vast majority data. Naturally, in general we interact over said information modifying it and in this way distinguishing it form a "simple" data transmission. On the other hand, these transmissions are hardly taking place, as they formerly did, between "mainframes" that do not "dialogue" among themselves, but between

PC’s that do communicate and have superior capacity for information transmission and storage than that of the old mainframes. This distinction (artificial at some point, as many others in the regulatory realm) was the one that permitted the "competitive" development of Internet in the past years in Argentina (1995-1999).

Telephony through Internet has been also an issue subject to doctrinaire arguments, which vanish or become solely theoretical as the market deregulates more and more, and the analysis of which will surpass the object of this article, notwithstanding I will make some introductory reference to the matter. It is important to bear in mind that telephony through Internet is not the same as IP telephony (also known as VOIP) even though they are frequently mixed up. The latter, simply refers to a certain kind of protocol (which is the one used by Internet) and which shall be more and more used by all the telecommunications networks. Telephony through Internet refers to the possibility of making a telephone call through a PC having access through an ISP to a web site with the necessary software to make a common telephone call.

The VOIP has been, in a tacit manner, considered illegal by the administration due to its inaction to act against the incumbents who cut off the access lines of some VOIP providers in March of this year. However not to many efforts were made to enforce clearly such tacit policy. Considering the types of licenses in the current regulatory framework, it is consistent with it to request a telephony license in order to offer VOIP. More difficulties will be faced by the regulatory agency in dealing with Internet telephony being them mainly technical and economic (the cost of control and its complexity). It is important to highlight why these things happen and there is an economic reason that explains this phenomena: the distortion in the tariffs between regulated (local) and non-regulated markets (long distance). As far as this distortion exists there is an strong incentive to substitute the more expensive service for the less expensive one provided that the latter appears as a reasonable substitute of the former. It has

happened in the past with the "call back", the data transmissions (through the by pass of the telephony network by the ancillary channels of orders) and will continue in the future by other means as long as the economic incentive survives.

The question summoned by resolution SC Nº 170/00 implies that may be in a immediate future Internet shall be the basic service and telephony shall be a value added service to Internet . I do not agree with this optimistic point of view. I think that the basic services stand for the essential needs of a whole community and unfortunately in our country it will be easier to universalize the telephonic service than to universalize the access to Internet . The recently known devised regulations 12. Would permit every telecommunications services licensee to be able to provide any kind of services (telephony, fax, data, Internet , etc.), with only one simple condition: that once the license has been obtained the provider shall have to inform the kind of service to be provided and submit certain technical information ten days before the commercial launch. We still need that this policy be confirmed by a presidential decree.

A last aspect to consider within the limited scope of this article is referred to the freedom of speech in the network. The President through the decree 1279/97 stated that: " the Internet service is considered cover by the constitutional right that protects the freedom of speech having in that sense the same considerations as other social media". In my opinion and even considering that the statement of the Executive Power is plausible, he has no opportunity to say any other thing, since it is reserved to an act of the Congress the regulation of the individual rights and in the event that this act violates section 32 of the Constitution, veto it. On the other hand the publishing of contents in the net, referred to an ISP or a site, must have more protection than the one deserved to other media. An ISP or a site can hardly control the content published in the net while other media -according to the circumstances- may do so. In a way they are more similar to a paper mill than to a print or a newspaper.

The trend to the universalization of the access to Internet has boosted in the last years. The non existence of a centralized regulation of the net is without any doubt one of the reasons of its growth. The adequate regulation of the telecom's services that support it when they are legal or de facto monopolies is sometimes a necessary or indispensable. But both fields must keep their necessary individuality in order to save the most interesting thing of Internet : its dynamism and vitality as an expression of the human action.

FOOTNOTES:

1 "The basic services granted under exclusivity shall be opened for the use of other services not embraced by such exclusivity paying tariffs to be controlled by the Regulatory Authority during the exclusivity period..."
2 "...The telecommunication's licensees shall give access to its networks, on non discriminatory basis, to the providers of information services".
3 The new proposed rules for licensing will increase this cost by setting a fee of U$S 5.000 for the application as well as other non explicit costs through more bureaucratic requisites in evaluating projects.
4 Originally (1994-95) TELINTAR charged for these links an amount of around 40.000 Dollars per month for a link of 64 Kbps. This amount was achieved by estimating the monthly traffic of data that a link of such characteristics could transport and then the company made a reduction. Resolution SC 2765/97 reduced said amount to U$S 2.400.
5 For example the concept of "common carrier" from the Anglo-Saxon System partially resembles our "public service",
6 The presidential rule dated June 9th 2000, which has been published in the Official Register of June 13th 2000, confirms this trend by foreseeing the proposed license regulation, which shall require only one class of license for telecommunication services that will permit the provision of any kind of such services.

7 At present, Comisió n Nacional de Comunicaciones (CNC) since the merger with the Comisió n Nacional de Correos y Telé grafos (CNCT), decree 80/97.
8 Resolution SC 97/96 establishes, in its whereas clause 5 that Resolution CNT 1083/95 regulates the value added services, the majority of which can be provided through the network that makes up INTERNET (vg: data electronic mail, data information, data electronic exchange, etc . . .).
9 Exclusive licensee of the international services listed in point 9.2 of Anex I of decree 62/90, originally owned in halves by Telefó nica de Argentina and Telecom, nowadays split-up and absorbed by said companies.
10 9.2 The S.P.S.I. (afterwords TELINTAR) shall provide within an exclusivity regime the following services: International telephony, International Telephony for preferred subscribers; International Data, International Telex and international point to point links hired for telephony, data transmission and/or value added services with the scope established in point 8.9.
11 Section 6 of resolution 194 SC/96 establishes that "value added service providers shall include in the terms and conditions of their agreements with their clients the following clause or legend: It is hereby forbidden to use the provided service for the transport of live voice, telex or data transmission. The breach of this clause shall be cause of recession with notice to the CNT, being the contracting party to blame".
12 Said regime ended in the provinces on October 10th 1999 and in the metropolitan area on November 8th 1999. Since then, four companies were authorized to provide said services. As from November 8th 2000 about ten companies more will join them.
13 See section 21 sub section f) of decree 1185/90. See section 21 sub section f) of decree 1185/90.
14 See section 5 of Annex I of the presidential rule dated June 9th 2000

Current Broadband Access Infrastructure

1. The main technologies and how they work
   1.1. Digital Subscriber Line (DSL)
   1.2. Cable (Under construction)
   1.3. Fixed Wireless (Under construction)
   1.4. Fiber to the Curb/Home (Under construction)
2. Deployed infrastructure in Argentina (Under construction)
3. Comparative chart (Under construction)

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The main technologies and how they work

DSL

DSL, a generic name for a family of high-speed digital "lines" being provided by competitive local exchange carriers (CLECs) and local phone companies to provide access to their local subscribers. Even though it uses the regular POTS (plain old telephone system) phone line, DSL provides a way of "multiplexing" a phone call and an internet connection simultaneously. What this means is that the user can be on the Internet and can pick up the phone to make a call on the same line, at the same time.

DSL modems are much faster than traditional "dial-up" analog modems. Each type of DSL provides different maximum speeds, from twice as fast to approximately 125 times faster than a 56.6K analog modem. Usually, with DSL the bottle-neck moves from the local loop to the access connection of the ISP/broadband access provider, or some server further upstream.

Another major difference with dial-up connections is that DSL can potentially be always on. Since the connection to the Internet does not require the end user to go through the Public System Telephone Network (PSTN), it is fundamentally different from a dial up connection oriented session. The DSL connection is always there. E-Mail and web browsing is, if everything works well "one click away".

Types of DSL
xDSL is used interchangeably with the acronym DSL to describe the different variations of the technology: ADSL, SDSL, HDSL and others. They all fall into one of two categories: asymmetric DSL (ADSL) and symmetric DSL.

DSL for Home and Telecommuters
Asymmetric DSL (ADSL) reserves more bandwidth going downstream to the user and less going to the Internet, using more bandwidth for downloads to the user and less bandwidth for uploads from the user to the Internet. This was done on purpose since it is more useful to Internet surfers and users of remote LANs, because they typically download much more data than they send.

G.dmt ADSL - G.dmt ADSL (also known as Full-rate ADSL) is the other standard for home DSL service. The G.dmt variety can

download data at up to 8 Megabits per second, and send data upstream at up to 1.5 Megabits per second, if the modem is located within 10,000-12,000 feet of the phone company's CO (central office). Up to 18,000 feet away from the CO, G.dmt ADSL can reach up to 1.5 Megabits per second downstream. This type of DSL may require the telephone company to install a device called a "splitter" on the phone line, requiring an installation visit to the end user's home. The big difference between G.dmt and G.lite (discussed below) is speed.

G. lite ADSL - G.lite ADSL (also known as universal ADSL) is a new standard for DSL service that became available in mid-to-late 1999. The cost for equipment and service is be less than other varieties. It is also be easier to install than other varieties, where the end user will be able to do it himself. This standard is based on ADSL, and offers downstream speeds up to 1.5 Megabits per second and a maximum upstream data rate of 384 Kilobits per second. The major downside to G.lite ADSL is that if it is not adecuate for voice and entertainment applications.

RADSL (Rate Adaptive Asymmetric Digital Subscriber Line) - RADSL operates at the same bandwidths as ADSL, up to 7 Megabits per second downstream and up to 1.5 Megabits per second upstream, with the additional capability of adjusting bandwidth to the quality of the phone line during the data transmission, instead of just once at the start of the connection.

DSL for Business

Symmetric DSL provides the same rate both ways, and is suited more to Web servers, corporate networks, and those who send out large quantities of data.

HDSL (High Bit-Rate Digital Subscriber Line) - HDSL is the most established of the DSL technologies. It is symmetric, with a maximum 1.5 Megabits per second traveling both ways over two copper phone lines, or 2 Megabits per second over three phone lines. It is often utilized as an alternative to T1 connections. (A T1 connection is a high speed, dedicated telephone line offering 1.54 Megabits per second of data transfer.) HDSL is limited to a distance of 12,000-15,000 feet. This range can be extended with the use of signal repeaters.

HDSL II (High Bit-Rate Digital Subscriber Line II) - HDSL II offers the same performance as HDSL, but over a single phone line.

SDSL (Symmetric Digital Subscriber Line) - SDSL offers a symmetric transmission of data at the same speed as HDSL, with two important differences: it can be done using only one phone line and the user must be no more than 10,000 feet from the phone company's central office. SDSL is the forerunner to HDSL II.

IDSL (ISDN Digital Subscriber Line) - IDSL is a hybrid of DSL and ISDN technologies. It uses the same data encoding technique of ISDN devices and delivers up to 144 Kilobits per second bandwidth. The difference between the two is that IDSL bypasses the congested phone network and uses the data network instead. Also, there is no call setup delay like the end user experience with ISDN connections.

VDSL (Very High Bit-Rate Digital Subscriber Line) - Currently in its experimental phase, VDSL is the fastest DSL technology, with rates from 13 to 52 Megabits per second downstream and 1.5 to 2.3 Megabits per second upstream. The tradeoff for this speed is that the maximum distance from the central office to the user must be between 1,000 and 4,500 feet.

Internet service providers (ISPs) provide access to the Internet. The ISPs that offer DSL usually don't own the equipment that makes the service possible. Instead, they buy the service from a traditional phone company or one of the newer competitive ones. The distinctions between telephone companies and Internet service providers are already blurred because ISPs can also be telephone companies. Also, many telephone companies sell Internet access. The terms NSP (network service provider) and USP (universal service provider) are coming into use to describe these companies that sell many different communication services.

DSL Hardware Information

Compatible Equipment

If the end user is going the ADSL route, there are two types of modems that will work: internal and external. Internal modems are cards that are installed inside the computer via a plug-in card. External modems can be connected to the computer via a USB port, Ethernet jack, or a parallel connection. If the computer is already configured to operate on a local area network (LAN), it will have an interface that can connect to an external modem.

It is important to make sure that the DSL modem (sometimes referred to as a "terminal adapter") works with the DSL provider's equipment. The DSL modem should be included in the package with the high-bandwidth service sold to the end user by the DSL provider. This will probably change in the future as more manufacturers produce equipment based on universal standards. If the end user buys a modem off the shelf, the he/she must ask if it is compatible before ordering service from a DSL provider.

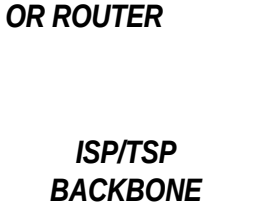
If the end user has more than one computer at home, they can all be connected to one DSL modem using a home network. One option is to buy an Ethernet hub and connect all the computers to it, much like a small-office local area network (LAN). The end user can then connect the hub to his/her DSL modem and all the computers can access the DSL connection. There are some DSL modems that include an Ethernet hub. One disadvantage of this approach is that the end user would need to install special wiring throughout his/her home to connect the computers. Another option is to use one computer as a "gateway" to other computers in the home via home networking technology. There are three types of home networking that don't require any new wiring in the house: power line, phone line, and wireless. Power line technology uses the electrical wiring and outlets of the home to create a network. Phone line networking does the same thing using the telephone wiring and outlets—and it does not interfere with phone calls on the same wires. Wireless technology accomplishes the task using two-way radio waves transmitted through the house. Overall, using a PC as a gateway has the disadvantages of: requiring some technical expertise, requiring the gateway PC to be turned on for other PCs and networked devices to use the Internet

connection, and lacking reliability as PCs often crash or lock up.

A new category of ADSL equipment known as residential gateways is emerging. These dedicated devices act as a bridge between the Internet and the home LAN. It is a specific purpose, stand-alone box that acts as a DSL modem and a home networking hub for multiple PCs. The main advantages of a residential gateway will be their ease of use and reliability. More intelligent residential gateways, called multi-service residential gateways, will provide additional capabilities, such as enhanced telephone features and entertainment services.

DSL Diagram

How DSL Reaches the SOHO

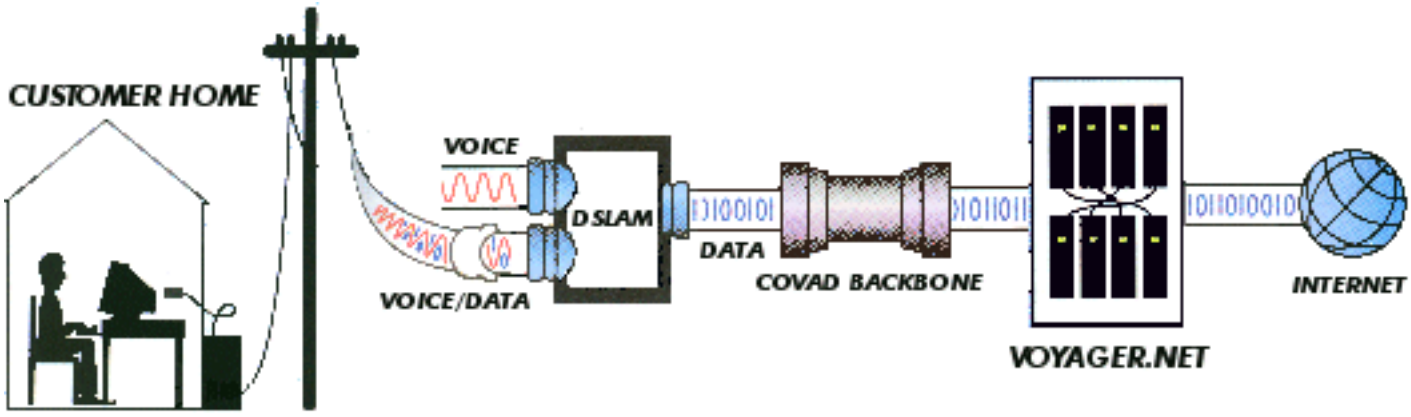


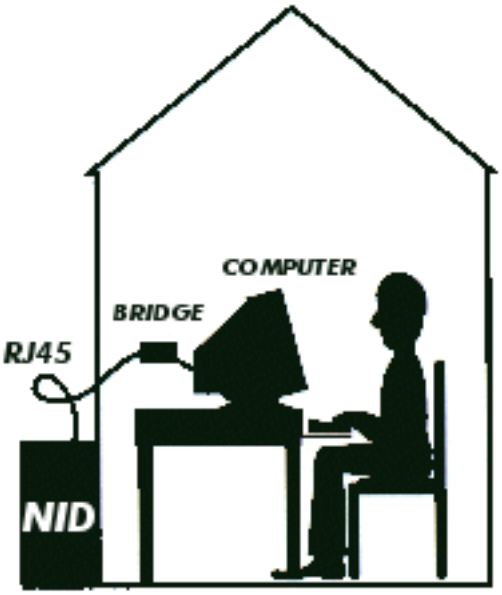
DSL Connection Diagram

DSL Path Inside the SOHO

dsl connection to coputer

NID ---> Phone Line ---> Phone Jack (RJ11) ---> Filter ---> DSL Bridge ---> Computer ---> Phone


CUSTOMER HOME
VOICE
DSLAM
VOICE/DATA
DATA
COVAD BACKBONE
VOYAGER.NET
INTERNET


COMPUTER
BRIDGE
RJ45
NID

Development plans

Broadband Access to the residential and small office in Argentina is poised to grow at 158% annually for the next four years. Cable modem and DSL subscribers, not including fixed wireless and fiber to the curb, in 2000 totaled a mere 80,000. However, broadband users will increase to 500,000 by 2004, according to the Yankee Group. See below the attached executive summary for more information.

Executive Summary of Cable Modem and ADSL Residential Internet Access in Argentina, Mexico, Chile, Venezuela, and Colombia - The Yankee Report Vol.1 No.21 - December 2000

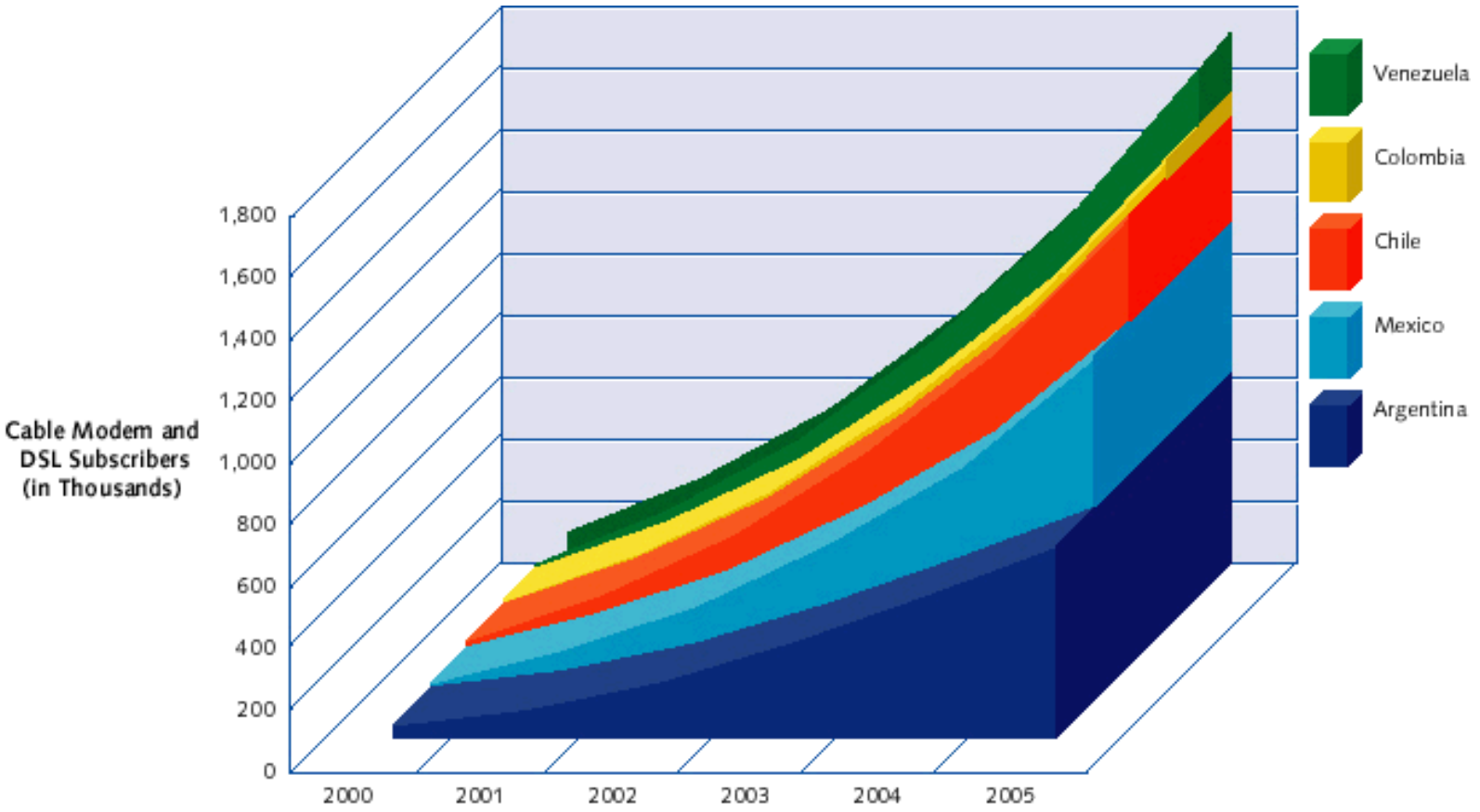
Broadband residential Internet access in Latin America is poised for fast-paced growth as competition in deregulated environments creates pressure on service providers to lower monthly access prices and scramble for subscribers. **The Yankee Group predicts that cable modem and asynchronous digital subscriber line (ADSL) subscribers in Argentina, Mexico, Chile, Venezuela, and Colombia will grow from 98,000 in 2000 to 1,714,000 in 2005, a compound annual growth rate (CAGR) of 77% (see Exhibit 1).**

High customer equipment costs and disappointing bandwidth cooled consumer receptivity to broadband. Now, additional international bandwidth is available through submarine cables and will let broadband residential service providers deliver a real broadband experience. Competition is heating up as incumbent telcos move ADSL technologies out of field trials and compete with cable modems in residential markets. In this Report, the Yankee Group analyzes the rollout of cable modem and ADSL service in the top five Spanish-speaking Latin American markets. See the upcoming Brazil Market Strategies Report for broadband in Brazil.

(Note: All monetary figures are in U.S. dollars; Value-Added Tax is not included in any of the Report exhibits.)

Exhibit 1
Urban Residential ADSL and Cable Modem Internet Subscriber Forecast for Argentina, Mexico, Chile, Venezuela, and Colombia

Source: the Yankee Group, 2000



Other technologies

Business and Financial Environment

- Credit markets (VC availability)

This article is from *The Industry Standard:* www.thestandard.com/article/display/0,1151,8026,00.html

December 6, 1999

No Need to Cry for VCs, Argentina

Trying to escape the fierce competition for startup deals in Silicon Valley, savvy investors are turning to Latin America.

A decade ago, a twentysomething from Buenos Aires named Eduardo Elsztain knocked on George Soros' door in New York, pitched a business plan and came out with $10 million to invest in the Argentine real estate market, then in the doldrums after years of hyperinflation and economic stagnation.

Now 39, Elsztain has since become the country's largest landowner – a shopping mall and hotel operator overseeing a business empire that sprawls through the financial, real estate and agricultural commodities markets. And by the way, Soros is a richer man for it.

Young entrepreneurs now are knocking on Elsztain's door. He has become one of a handful of Argentine venture capitalists funding Internet startups, and he's a leading force behind the Endeavor Foundation, a Buenos Aires-based nonprofit group that seeks to identify and promote the future success stories of the Latin American online market.

"Eduardo is Argentina's most emblematic entrepreneur," says Oscar Toppelberg, who heads the venture capital division at IRSA, Elsztain's flagship company. "It is only natural that he is trying to help along others who are trying to do what he did some time ago."

Just as Argentina became a lucrative place for capitalists willing to bet on the country's stabilization, privatization and deregulation processes of the early 1990s – which powered strong growth throughout the decade – the country is turning into a magnet for those who believe it will be at the fore of the Internet wave now washing over Latin America.

"There is already a tremendous amount of money for Internet startups in this area, and Buenos

Aires is a good place to be," says Zane Gresham, a partner with the San Francisco-based law firm Morrison & Foerster. "It has the potential to be a regional center for the Spanish part of South America." Gresham recently opened the firm's first Latin American branch office in the Argentine capital.

Argentina is seen by some savvy investors as the country offering the most promising Internet investments in Latin America. Among other factors, the country has built a state-of-the-art telecommunications system, and it's enjoying rapidly falling telecom prices as a result. Two years ago, the cost of an Internet connection averaged $250 a month; in September, a typical Net connection was running $25 a month. And in late October, the country's largest ISP began to offer access at $9.90 a month.

While Brazil currently has more Internet users than the rest of Latin America combined, its Portuguese-speaking population of 160 million pales in comparison with the world's 400 million Spanish speakers. Meanwhile, market researchers expect Latin America's total Internet audience to grow from 7.5 million today to 30 million or more in the next three years.

"Latin America is the great hope," says Antonio Mena Garcia, a partner with Andersen Consulting. Mena Garcia believes one of the growth factors for the Internet in the region is the penetration of cellular phones and cable TV. About 11 percent of Argentines own a cell phone; roughly 60 percent of households have cable. "More and more you will be able to access the Net with electronic [devices] other than the computer," he says.

Argentina's online retailing sales in 1999 will be about $3 million, an insignificant figure by any measure, and a fraction of Brazil's $70 million to $100 million. But the numbers are going to grow, and fast. According to Boston Consulting Group, consumer e-commerce in Latin America will reach $3.8 billion by 2003 from the current $100 million or so. BCG contends that business-to-business transactions will be many times more than that, although they have no exact estimate.

Some investors believe that because of its fledgling stage, Argentina offers venture capitalists the precious opportunity to relatively cheaply enter the market at a time when the country is poised to generate faster-than-average economic growth.

One of the most aggressive U.S.-based investors in Argentina has been Hicks, Muse, Tate & Furst, a Dallas-based leveraged buyout firm that has its own venture capital fund devoted to the country.

Hicks Muse first came to Buenos Aires to invest in the country's cable, media and telecommunications industries. To date, it has poured in more than $1.5 billion, snapping up some of the best companies in those sectors. Lately, it's turned its attention to the Internet. "The country is far behind, but is catching up faster than expected," says Lisandro Bril, an economist who heads the firm's Argentine VC fund.

The company made a splash this year when it bought a minority stake in El Sitio International, a local general-interest Web portal, in partnership with other domestic investors for more than $40 million. The deal was a wake-up call for many businesses in the country that had been reluctant to delve into the Internet.

Hicks Muse also invested $7 million in the first Argentine auctions site, MercadoLibre.com, a project that is already going regional and growing at lightening speed, though it faces stiff competition from two similar sites that cropped up around the same time, DeRemate.com and Oportunidades.com.

Venture capitalist interest in Latin American dot-com companies was dramatically enhanced by the success of StarMedia Network, a Spanish and Portuguese portal created by Uruguayan-born Fernando Espuelas. StarMedia, which went public in the U.S. earlier this year, now sports a market capitalization of more than $2 billion.

StarMedia was a huge hit for its New York venture capitalists, Chase (CSI) Capital Partners and Flatiron Partners – prompting them to search for more Latin American investments. "StarMedia's success has whetted the appetite of many VC funds for Latin America," says Espuelas. "The VC business model did not really exist in the region, and suddenly we are seeing quite a bit of activity. But Chase has got to be given credit for the foresight."

Chase also has funded Patagon.com, one of the first online stock brokerages in South America. The bank sank $9 million into the startup, which is now worth an estimated $100 million and is expected to go public before year's end.

"There are now a huge number of entrepreneurs with wonderful ideas. It is really an entrepreneurial revolution in Latin America," says Susan Segal, a partner at Chase Capital. Its strategy is to gain a foothold in the big categories of the online industry, including a financial site, Patagon.com; an auction site, MercadoLibre.com; a portal, StarMedia, and so on.

Other big players include BankBoston Capital and GE Capital, which invested $10 million in a Spanish Internet-solutions firm to help it develop business projects in the region. Also financing Latin American startups are the successful foreign private-equity funds that snapped up many better-established Argentine companies in the early '90s when the country entered a phase of rapid growth. As was the case with Elsztain, they had a good run with their initial equity investments and do not want to be left out of the Internet boom.

All of the professional investors in the region agree that any Internet project must have regional ambitions to be considered seriously, and most agree that business-to-business startups will see the most activity in the near future. Investment pros also tend to believe that because of the lack of development of Latin American capital markets, companies that want to go public are better off doing so from the United States.

"We recommend incorporating the company in the U.S., specifically in Delaware because of its legislation, and launching the IPO on Nasdaq," says Morrison & Foerster's Gresham.

Although they compete for the good projects, most of the venture capitalists working in this market are connected through Elsztain's Endeavor Foundation. Once the group's selection committee identifies the best ideas, it helps promote the entrepreneurs by introducing them to VCs, taking them on U.S. road shows and helping them devise the best strategies to attain their goals.

Trumpets Maria Eugenia Estenssoro, Endeavor's managing director: "Businessmen in the United States are loving what they see."

- Taxes/licenses
- Overhead or fixed costs
- Available services (accounting, legal, utilities, office space, marketing/promo, technical)

Velocom Case Study

Under Construction

Universidad de Buenos Aires Case Study

1. History of Internet at the UBA

En 1985, por iniciativa de un grupo del Departamento de Computación de la Facultad de Ciencias Exactas y Naturales de la UBA, surge la red uupc para correo electrónico.

En 1989, surge también para correo electrónico la red BITNET.

En 1993, en el ámbito de la UBA es creado el Centro de Comunicación Científica (CCC) a fin de implementar una red para la universidad.

En 1994 ya hay más de 800 instituciones conectadas en todo el país.

En abril de 1994 comienza a funcionar en la UBA el primer enlace Internet de alta velocidad de Argentina. También se conecta Secyt.

Posteriormente se conectan las distintas Unidades Académicas e instituciones de investigación, con los primeros enlaces dedicados de alta velocidad.

Hacia fines de 1994 comienza un proyecto del Ministerio de Cultura y Educación de la Nación; la "Red de Interconexión Universitaria" (RIU). Su objetivo es el armado de una red que interconecte a las 33 universidades nacionales y provinciales.

Actualmente,la red argentina abarca otros ámbitos, como los comerciales, en que participan cada vez más empresas. Sin embargo, queda un largo camino a recorrer por el país para alcanzar un sistema de comunicación electrónica suficiente y adecuado.

Cierto es que, con las facilidades existentes, hay una tendencia a utilizar los recursos para acceder a la información reunida en el exterior. Es de suma importancia que la Argentina esté conectada con el resto del mundo. Pero es también de fundamental importancia que que contemos con conexiones internas nacionales, para constituir la denominada Red Troncal Nacional.
Es a través de estas redes que circularán las contribuciones que la ciencia argentina vaya produciendo, para enriquecimiento de la red mundial.

De a poco se va creando conciencia de que la Argentina produce información científica de importancia, cuya circulación general es imperativa.
De ahí que todos aquellos que generen información académica deben introducirla en la red. La constitución y armado de la misma es, pues, algo en que todos tenemos un papel protagónico. Es un reto que hay que enfrentar urgentemente.

2. Configuración de la red del Depto:

La red del Depto. está constituida por dos subredes separadas: la red de alumnos y la red de docentes. Las PCs de los cuartos de los docentes están conectadas a la red de docentes. Todas las PCs de los laboratorios de alumnos están conectadas a la red de alumnos y son de libre acceso para los alumnos y docentes del Depto. Para acceder a los hosts Unix, en cambio, es necesario tener una cuenta.

Hosts Unix de la red de docentes: Zorzal, Dalila, Penlope, Morticia y Atenea
Hosts Unix de la red de alumnos: Milagro, Palmiro y Electra

Quienes pueden tener cuentas:

Todos los docentes (excepto los ayudantes de segunda) tienen cuenta en los hosts de la red de docentes. También tienen cuenta allí los investigadores y los becarios. Los alumnos pueden tener cuenta en los hosts Milagro y Electra de la red de alumnos. La máquina Palmiro es de uso exclusivo de los alumnos de las materias Base de Datos y Laboratorio VI.

Sólo aquellos alumnos que se encuentren realizando su Tesis de Licenciatura tienen la posibilidad de solicitar una cuenta en la red de docentes.

3. What is RedUBA ?

Hoy, las comunicaciones electrónicas permiten la conexión a Internet, la mayor red científica del mundo, en la que es posible buscar y acceder a información de la más diversa índole. Para que la Universidad de Buenos Aires (UBA) pueda acceder a esto, se hace necesaria la interconexión de sus Unidades Académicas mediante enlaces dedicados de alta velocidad para que las mismas puedan conectarse al resto de la comunidad Internet tanto Nacional como Internacional. Debido a esto, el Centro de Comunicación Científica (CCC) de la UBA, dependiente de la Secretaría de Ciencia y Técnica de la UBA, tiene como misión armar y mantener la RedUBA .

Estado actual del proyecto RedUBA

En la actualidad la RedUBA ya cuenta con un enlace dedicado de alta velocidad con el resto del mundo Internet y algunos enlaces con otras instituciones del país. Desde julio de 1995, las Unidades Académicas de nuestra Universidad (13 facultades, colegios de la UBA, SISBI y Rectorado) se encuentran interconectados con enlaces de alta velocidad los que permitirán a docentes, investigadores y alumnos de la UBA el uso completo de los servicios de Internet vía nuestra red. También están conectados otros institutos de la universidad, como el Instituto de Ingeniería Biológica (Ingebi), Fundación Campomar, Instituto de Cálculo, Instituto de Astronomía y Física del Espacio (Iafe), Centro de Investigaciones del Mar y Atmósfera (Cima) y otros organismos vinculados a la UBA como son el Ministerio de Justicia, Organización Panamericana de la Salud (OPS), Instituto Nacional de Tecnología Industrial (INTI), Instituto Nacional de Tecnología Agropecuaria (INTA), Secretaría de Ciencia y Tecnica de la Nación (SECyT).

Todo esto forma parte de la red académica que se estáconstruyendo en nuestro país. La RedUBA se comunica con otras entidades tales como la Universidad de la Plata, Córdoba, Bahía Blanca, Litoral, San Luis, Cuyo, la CONAE, CNEA, Ministerio de Relaciones Exteriores, Ministerio de Economía, Ministerio de Educación y otros más que componen la red Internet Argentina. Hace muy poco tiempo, algunos proveedores de servicio ofrecen estas delicias al mundo comercial.

Actualmente, cada unidad académica estáinstalando su red interna que permitiráa los docentes e investigadores usar la red desde su lugar de trabajo. Algunas de ellas ya la están terminando y otras están muy avanzadas.

Por otro lado, la RedUBA forma parte del Proyecto de Red de Interconexión Universitaria que vincularáa las 33 universidades nacionales entre sí y con el exterior. Todas las universidades estarán conectadas a principios del año lectivo 1996.

Ahora bien, esto no es más que un conjunto de "cables" por donde tiene que fluir la información sin la cual la red no tiene sentido. Internet nos muestra una "ventana al mundo", "somos parte de la superautopista informática", "construimos una aldea global" ... Todos estos slogan son en gran medida verdaderos. Sin embargo, esto de INTERNET se tendría que analizar con un poco más de seriedad que subirse como furgón de cola a esta superautopista para acceder al primer mundo. Para el mundo comercial es un poco más sencillo. Vemos cuánto nos cuesta, qué beneficios nos da, cuánto nos dejaráen el bolsillo y listo.

Dentro del ámbito académico, sumarse a Internet, contar con un medio que nos permita comunicarnos entre nosotros y con el exterior, significa un desafío. Sabemos lo importante que es contar con el exterior, pero no sabemos hasta dónde están interesados en comunicarse entre sí. La Red en sí no va a provocar esto, pero por lo menos puede ser una herramienta importante para lograrlo; especialmente que en poco tiempo el conjunto de las 33 Universidades Nacionales estarán interconectadas.

Para nuestra Universidad y para el resto del sistema científico, construir y mantener la red va a significar invertir un poco de dinero del pequeño presupuesto con que contamos. Pero a nuestro entender, contar con la red hoy en día es tan importante como contar con un espacio de trabajo, luz, agua y teléfono, es contar con una herramienta que nos ayude a traspasar las cuatro paredes que nos encierran.

Cómo continuar entonces?

Un riesgo importante a superar es no convertirnos en simples espectadores. Es imprescindible armar las estructuras para la generación de información propia organizada. Esto no es un problema técnico. Las herramientas existen. Lo importante es obtener los recursos humanos para colocar los contenidos. Esta tarea no estáen manos de los especialistas de redes sino en los usuarios de las redes, en los científicos, en los académicos. Cabe aquí mencionar el trabajo desarrollado para las elecciones presidenciales del 14 de mayo de 1995, como un claro ejemplo de como la información puede generarse para que cualquier usuario de la red pueda accederla.

El reto es que la red sirva para sacarnos del aislamiento y permita hacernos conocer. Este reto está en sus manos.

4. This is a very recent article published in La Nación, one of the major newspapers of Buenos Aires.

Para atraer a los potenciales estudiantes a una universidad, lastradicionales charlas informativas sobre las carreras ya no sonsuficientes. A tono con la creciente oferta de instituciones y con lamayor disponibilidad de información, las universidades -sobre todo lasprivadas- agudizan el ingenio para presentar su oferta.Según pudo recoger La Nación, la última tendencia de este marketing universitario pasa por mostrar a los potenciales alumnos la vida real enla universidad: los chicos pueden hoy asistir a clases y tener entrevistas personales con directivos y profesores, mientras se los invita a recorrerla institución y hablar con sus alumnos. La propia universidad sale avisitar y promocionar su oferta en colegios secundarios y lleva a losestudiantes de cuarto y quinto años a que la visiten.Las nuevas estrategias responden también a una transformación en lospropios jóvenes, que llegan cada vez con más información, ya que cuentancon acceso a distintas fuentes -folletos, guías y páginas de Internet-para obtener datos académicos."El proceso de elección de una carrera es largo y complejo. Los chicosllegan a nosotros en algún momento de ese proceso y tenemos que poderresponder a todos", dijo a La Nación Oscar Echevarría, decano de laFacultad de Diseño y Comunicación de la Universidad

de Palermo (UP).Allí, cada una de las seis facultades prepara distintas actividades pararecibir a los interesados, "con la condición de que sean vivenciales". Porejemplo, la Facultad de Derecho organiza "La resolución de un caso", conla coordinación de un docente; en Humanidades y Ciencias Sociales, losinteresados en Periodismo participan del taller "Detrás de las noticias",y los que quieren estudiar arte acceden la charla "Otra mirada al MuseoXul Solar", "El Senado que no conocemos" es para los que quieren seguirCiencias Políticas y también se discuten "Las oportunidades laborales deun licenciado en Letras". "El objetivo es que la orientación tenga distintos contenidos, siempre con la universidad como concepto", dijo Echevarría.Por todos los mediosLos que se acerquen a la Universidad Argentina de la Empresa (UADE),mientras tanto, pueden asistir a clases de la carrera que les interesa ysolicitar encuentros personales con sus directivos. "La más pedida esInformática", contó María Cristina Serrano, secretaria de AsuntosEstudiantiles de la UADE.Además de hacer visitas a colegios secundarios y organizarlas en la propiauniversidad, reciben a los padres de los chicos y tienen una base de datossobre alojamiento -departamentos para alquilar y pensionados- para los quevienen del interior. "Los chicos tienen cada vez más información. Preguntan sobre el plan de estudios, el sistema de evaluación, qué pueden hacer con el título y sihay intercambios para hacer parte de la carrera en el exterior", dijoSerrano.En la Universidad de Morón (UM), la más poblada entre las privadas, con17.000 alumnos, existe un servicio de orientación vocacional abierto a lacomunidad y se organizan visitas guiadas de estudiantes secundarios a susede. Este año, además, se lanzó el programa radial "Proyecto UM", "con unfuerte contenido vinculado a la orientación y la inserción profesional",contó a La Nación Marcelo Freddi, director del Departamento de OrientaciónVocacional y Retención Estudiantil.Las estrategias comienzan antes. Anualmente se realiza la jornada "Launiversidad de puertas abiertas", para que padres e hijos conozcan elámbito universitario. "La UM organiza también concursos para los chicos decuarto y quinto año del nivel medio:son las olimpíadas de historia, de formación cívica y un concurso de poesía y cuento breve", dijo Freddi.Las nuevas tecnologías también se incorporan como herramientas. En laUniversidad Austral, por ejemplo, lanzaron este año un CD ROM que, ademásde incluir la oferta de la institución, permite ver la vida diaria en launiversidad. Y trae un test de orientación que propone responder a 150preguntas sobre intereses personales."La ventaja es agregar la interactividad a la información", dijo a LaNación Ana Inés Teste, del Departamento de Admisiones. Este año lo enviaron por correo a los interesados que lo solicitaron. Para el año queviene, piensan en distribuirlo a colegios y a profesionales de laorientación.Además, la Universidad Austral invita a chicos de quinto año de colegiossecundarios a un seminario de inserción universitaria para las distintasáreas del nivel medio. Además de organizar charlas informativas donde participan alumnos queestán cursando las distintas carreras, la Universidad de Belgrano (UB)extiende su actividad promocional: anualmente realizan viajes al interior,envían periódicamente información para los graduados y participación enexposiciones y ferias universitarias.Según contó José Luis Ghioldi, a cargo del Departamento de Ingresos, estasacciones están diseñadas según la información que se maneja en la UB. "Deacuerdo con nuestra tradición, muchos nuevos alumnos son hijos o parientesde egresados de la universidad, y otros tantos vienen del interior", dijo.En la Red* Internet ya es un medio consultado con frecuencia por los futurosestudiantes para obtener información antes de acercarse a las sedes de lasuniversidades. Para los interesados, algunas direcciones en la Red son:http://www.uade.edu.ar (UADE); http://www.palermo.edu.ar (Universidad dePalermo); http://www.unimoron.edu.ar (Universidad de Morón),http://www.ub.edu.ar (Universidad de Belgrano) y http://www.austral.edu.ar(Universidad Austral).

Under Construction

Pablo Chiaraviglio

p_chiaraviglio@hotmail.com – (650) 497-1263

SUMMARY

15 years of interdisciplinary mechanical, industrial and business experience in manufacturing and sales. A results-oriented, project management and sales executive who successfully developed new market opportunities directed new product development teams for products in international markets. Excellent written and verbal communication skills. Multilingual and well versed in the Latin American business environment.

Experience

1999-2000 *Engineering Manager*, **Techint Group – SIDOR,** Puerto Ordaz, Venezuela.
Managed the Engineering Design and Infrastructure departments. Managed expansion and improvement projects in infrastructure (telecommunications, networks, power and fluids) and Environmental (water treatment, landfill, recycling, ecosystems) areas.

1998-1999 *Project Manager – Electric Automation Systems*, **Dresser Industries Inc.**, Longview, Texas.
Managing the worldwide product launching of electric safety and automation systems for the oil & gas well head and transmission installations.

1995-1998 *General Manager,* **Dresser Industries Inc.** , Maracaibo, Venezuela.
Managed Operations and Sales for Venezuela.

- Implemented personnel training and process control methods, resulting in reduction of field non-conformance by 85%.
- Introduced new products, reducing dependence on single product revenue.
- Initiated ISO 9002 certification of the Sales and Service Centers.
- Negotiated and secured service contracts resulting in improved revenue baseline and continuos customer contact.

1988-1994 *Industrial & Technical Director*, **Moto Mecánica Argentina,** Buenos Aires, Argentina.
Managed the Engineering, Manufacturing and Business Development departments.

- Increased productivity four-fold, by Implementing MRP II. Managed plant expansion projects.
- Implemented QA program obtaining API 6A PSL 4 product certification.
- Expanded the international customer base to include Brazilian, Bolivian and Venezuelan companies.
- Added the Pipeline and Wellhead Automation product lines & services. Managed Compressor Station and Transmission Line Valve Automation Projects.
- As Foundry Manager increased productivity three-fold and reduced scrap rate from 2 to 0.5%. Designed and Managed Furnace & Molding line expansions.
- As Engineering Manager rewrote the manuals to bring department in-line with the API Q1and ISO 9001 standards. Implemented the use of AutoCAD.

1985-1988 *Engineering Project Manager,* **Vetco Offshore, Inc.** Rio de Janeiro, Brazil.
Managed detail engineering and manufacturing support for the Deep Water, Diver-less Completion Project (a total of seven sub-sea production satellite trees).
As Design Engineer, in Ventura California, performed design engineering, testing and installation of sub-sea production equipment.

Education

Present Telecommunications and Network Engineering, University of California, Berkeley.

1979-1984 Bachelor of Science in Mechanical Engineering, George Washington U., Washington DC.

Languages Fluent English, Spanish and Portuguese.

A native of Memphis, Tennessee, Matthew A Beem received his B.A. in International Economics and Spanish, along with a minor in German, from Trinity University in San Antonio, Texas in May of 2000. He is currently pursuing his M.A. at Stanford University in California, concentrating on intra-industry trade in the Mercosur countries.

Matthew has studied and researched in both Berlin, Germany and Buenos Aires, Argentina while completing his Bachelor's degree. In 1997, he attended and presented an essay at a conference on Latin America in Birmingham, Alabama concerning economic integration in South America. Also, in March of 1998 he was selected to present an essay at an international economics conference in Monterrey, Mexico concerning the expansion of the NAFTA agreement.

His work experience includes the management of the child-support escrow account for the Juvenile Court of Shelby County, Tennessee and a brief internship with Siemens in Berlin in the summer of 1999.

Upon graduation in June of 2001, he intends to take a break from his schooling and enter the workforce on a full-time basis. For his resume, click here.

Final Presentation: LAS194/CS377C

The Information Revolution In Latin America

Internet Access in Argentina: Obstacles & Opportunities

By: M. Beem & P. Chiaraviglio

3/14/01

Slide 1 of 23

Last time we said...

- Continue to collect data for the different drivers
- *Finish case studies*

- *Formulate business plan or recommendations for broadband access in Argentina*

3/14/01

Case Studies

- Universidad de Buenos Aires
- *VeloCom*

VELOCOM
HIGH VELOCITY COMMUNICATIONS

3/14/01

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Universidad de Buenos Aires

- Connectivity
- Servers/Web Sites
- Distance learning
- Inter-Institution co-op

3/14/01

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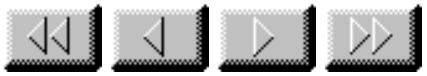

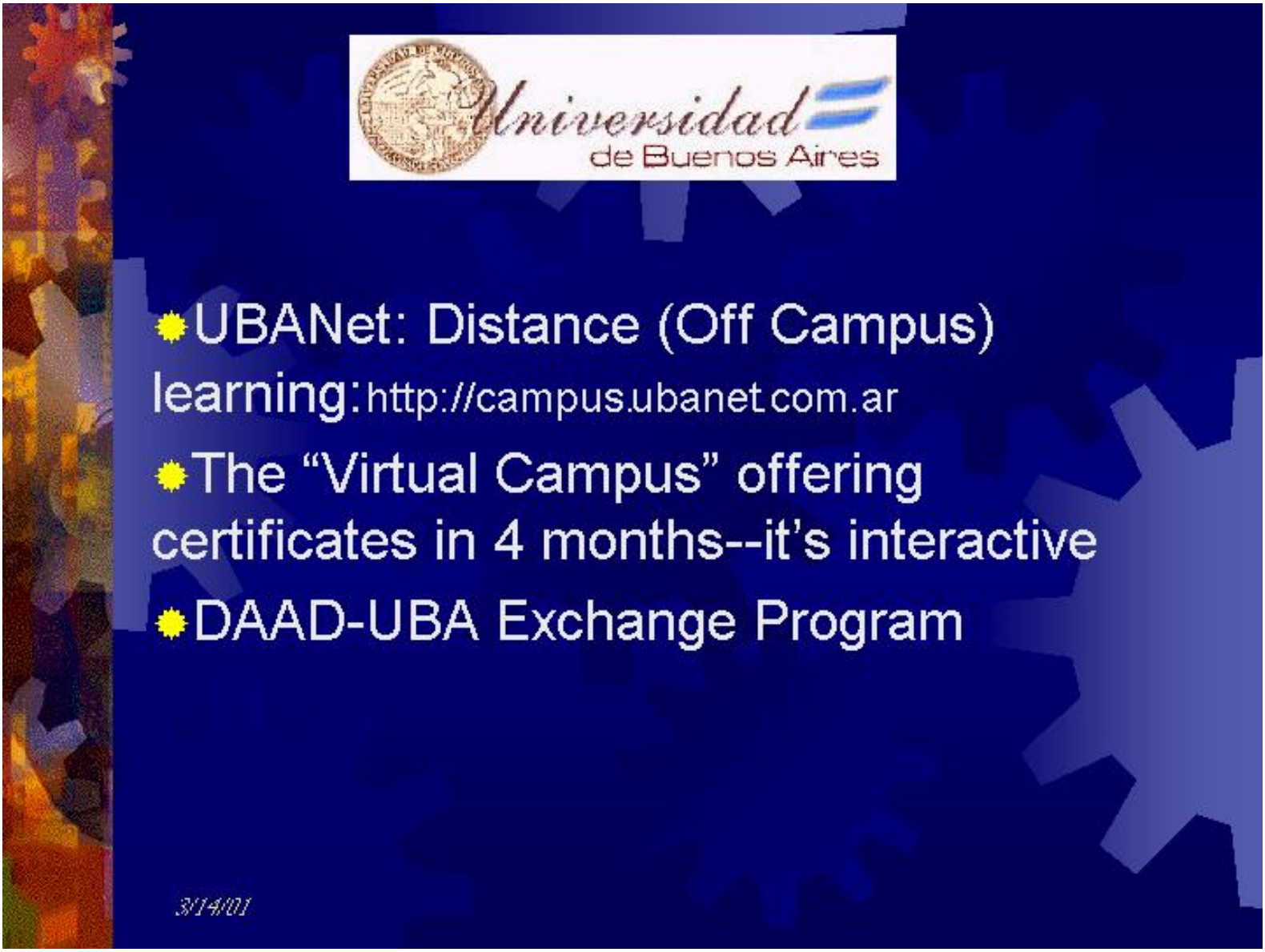
Universidad de Buenos Aires
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The "Virtual Campus" offering certificates in 4 months--it's interactive
DAAD-UBA Exchange Program
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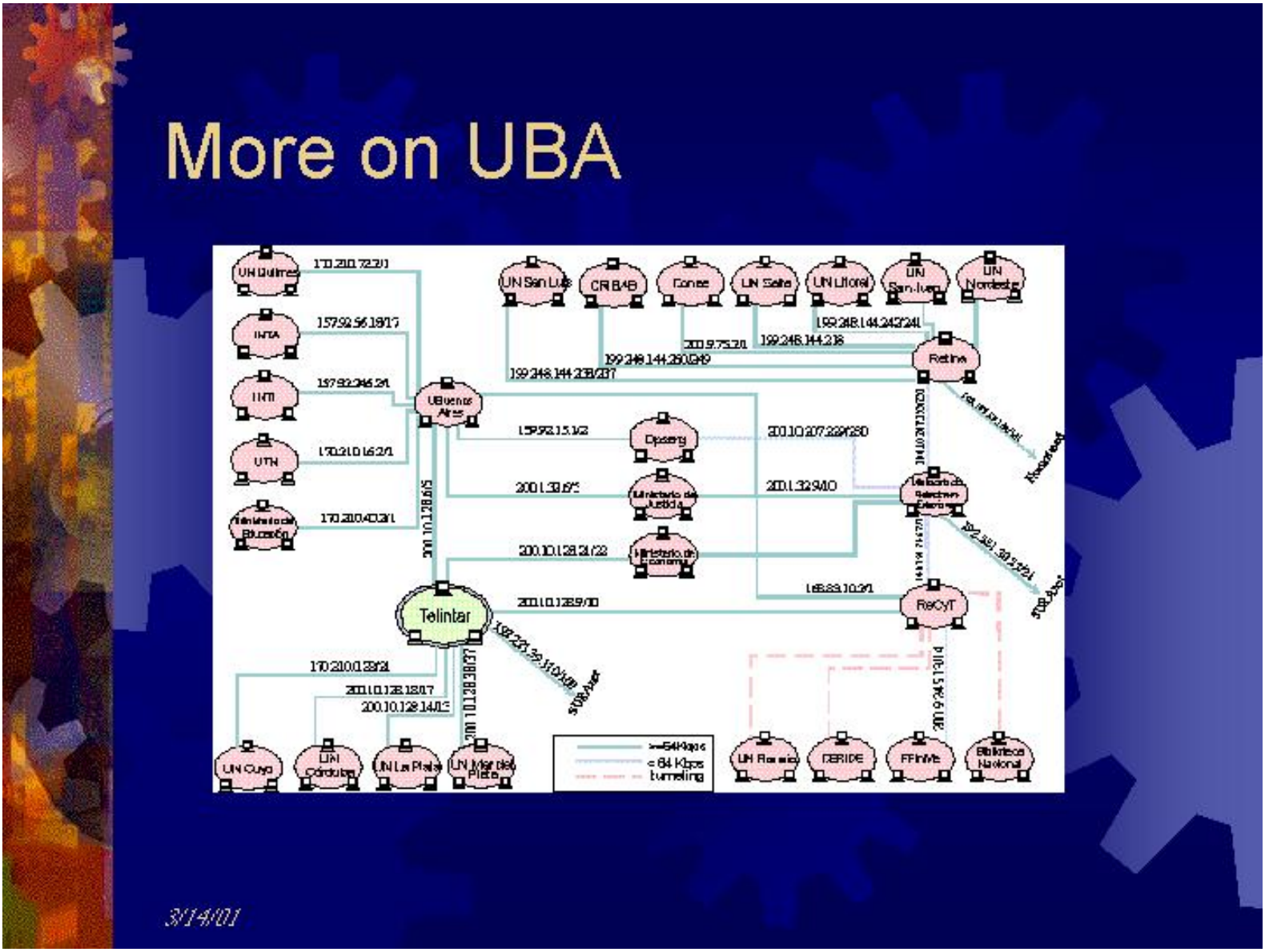
More on UBA
UN Quilmes
INTA
UNTI
UTN
UBuenos Aires
UN San Luis
CRUB45
Conae
UN Salta
UN Litoral
UN Nordeste
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Dpsarg
Telintar
ReCyT
UN Cuyo
UN Córdoba
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< 64 Kbps
tunneling
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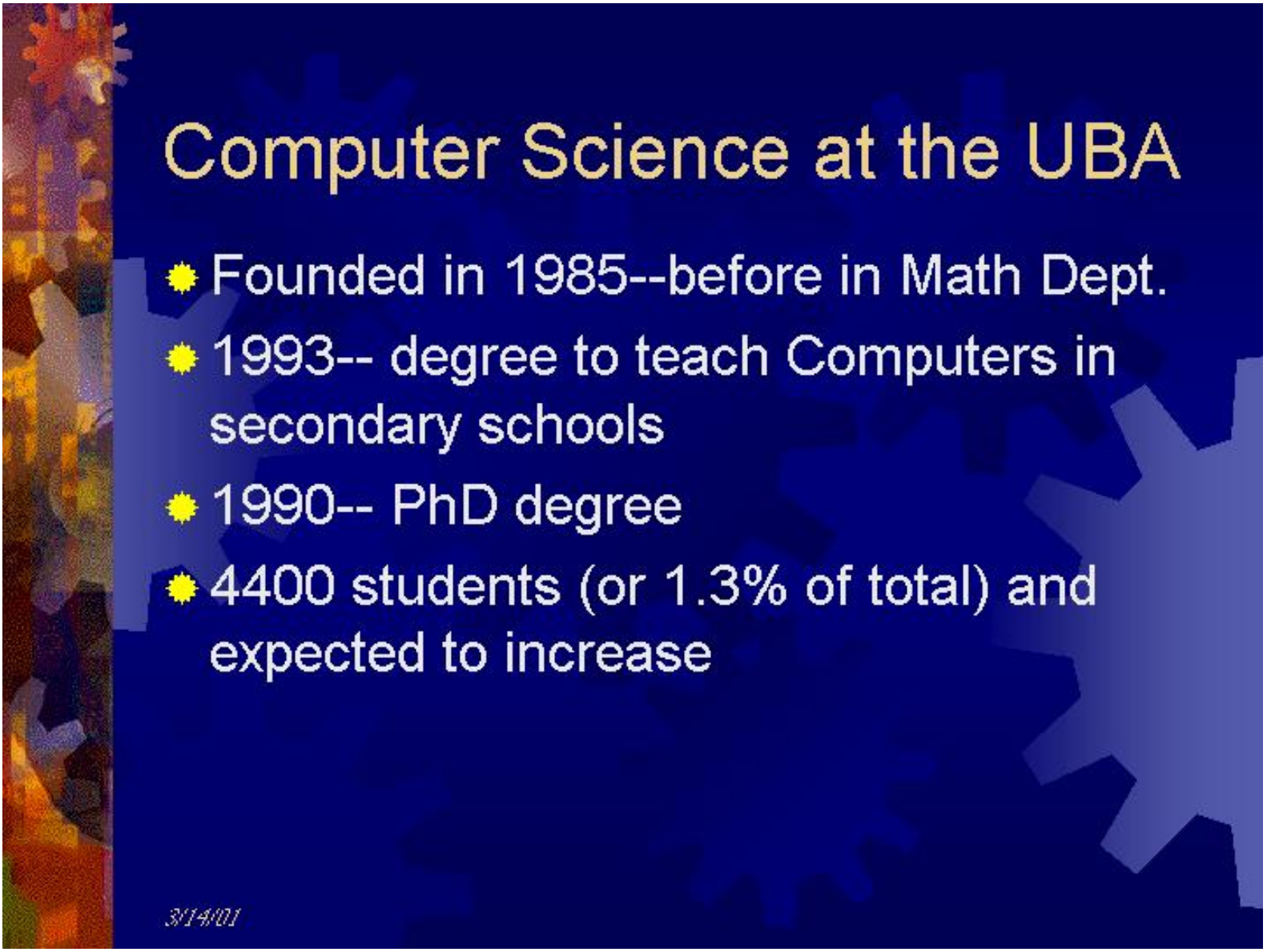
Computer Science at the UBA
Founded in 1985--before in Math Dept.
1993-- degree to teach Computers in secondary schools
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4400 students (or 1.3% of total) and expected to increase
3/14/01

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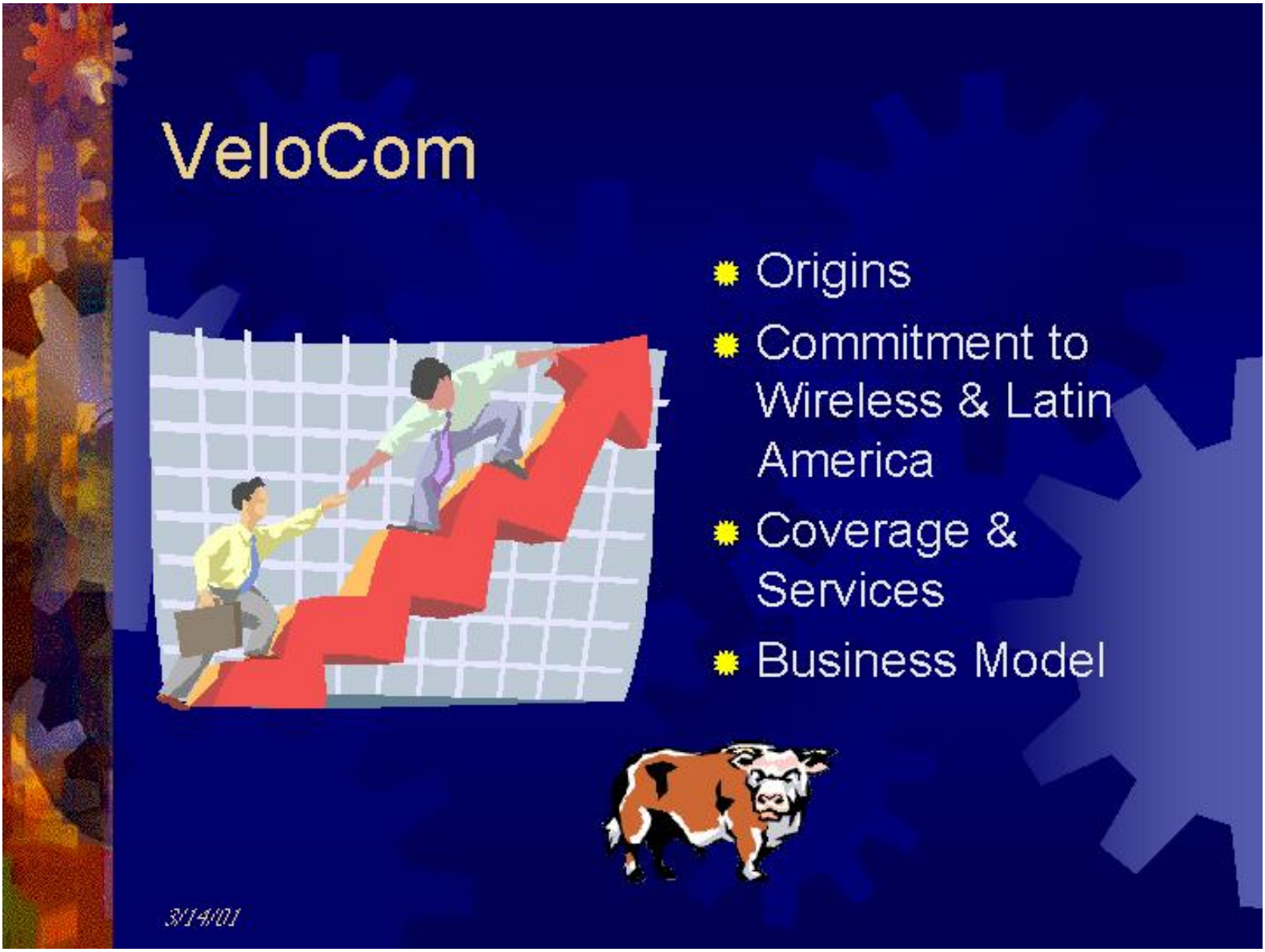
VeloCom
Origins
Commitment to Wireless & Latin America
Coverage & Services
Business Model
3/14/01

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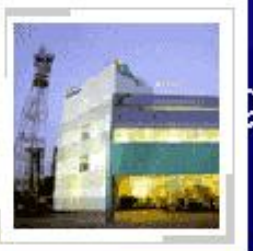
VeloCom - Origins

- Was fo rnational Inc. HC
- Focus ies to deliver nd video service
- Veloco exceeds US$40 1.8B from it
- Operat guay



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VeloCom – Coverage

- Velocom Argentina holds licenses to provide data transmission and Internet access services over wireless spectrum frequencies in the cities of Buenos Aires, Rosario, La Plata, Cordoba, and Mendoza
- *It has also deployed complementary technologies in the 3.4 GHz spectrum.*

3/14/01

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VeloCom – Services

- It is deploying broadband, last-mile networks that utilize a combination of fiber optic and fixed wireless access (FWA) technologies to provide SOHO users with a variety of services including:

- *Fixed, local telephone service*
- *E-mail;*
- *Web hosting;*
- *Teleconferencing;*
- *Virtual Private Networks (VPN);*
- *Co-location;*
- *High-speed, dedicated access to the Internet*





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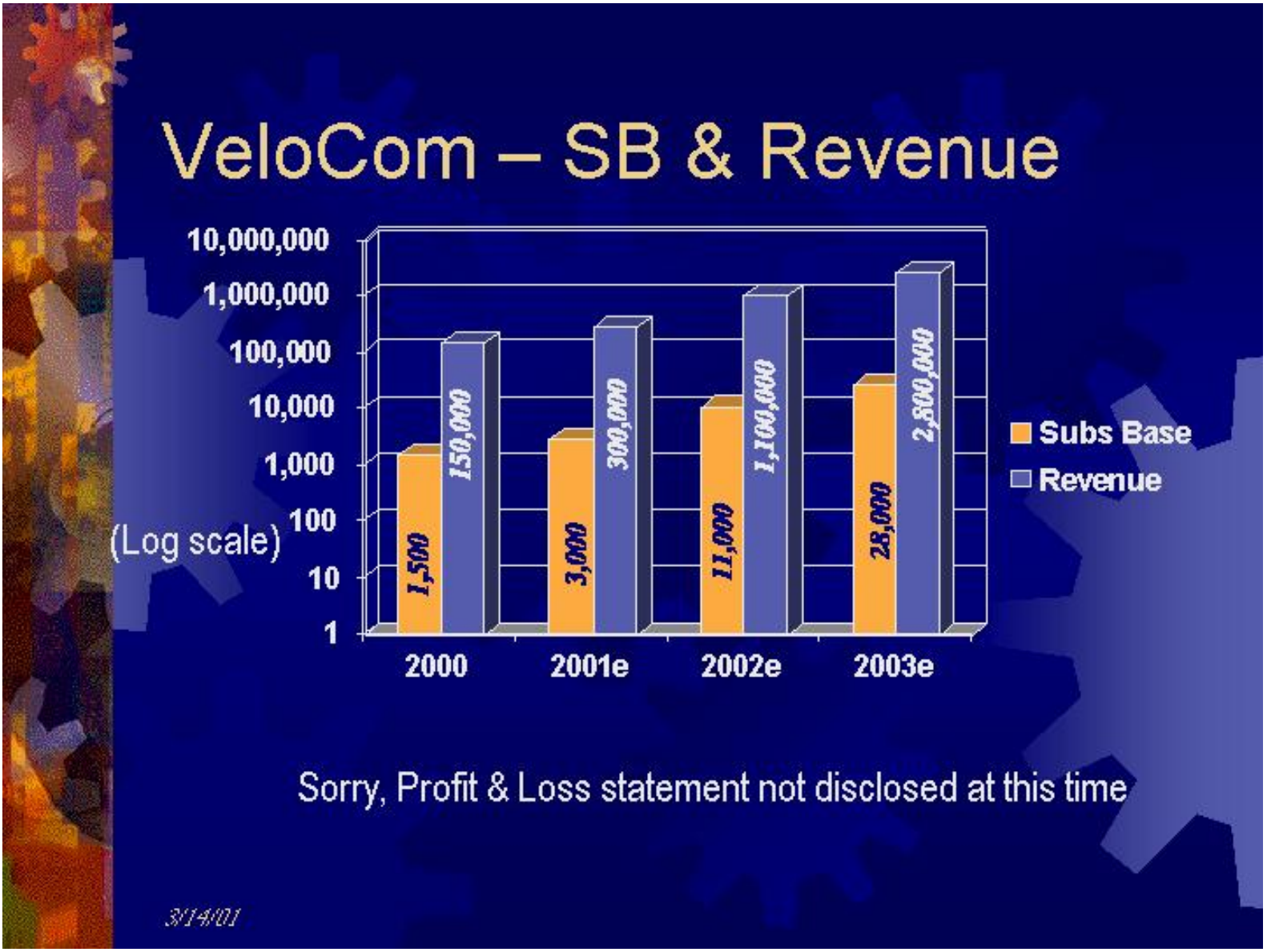

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VeloCom – Business Model

- Commited to WL Technologies
- Committed to South America – Emphasis on Brazil
- *Big Differentiators:*
  - *Value Added Services*
  - *Fast Time to Market*
  - *Last Mile Access*

3/14/01

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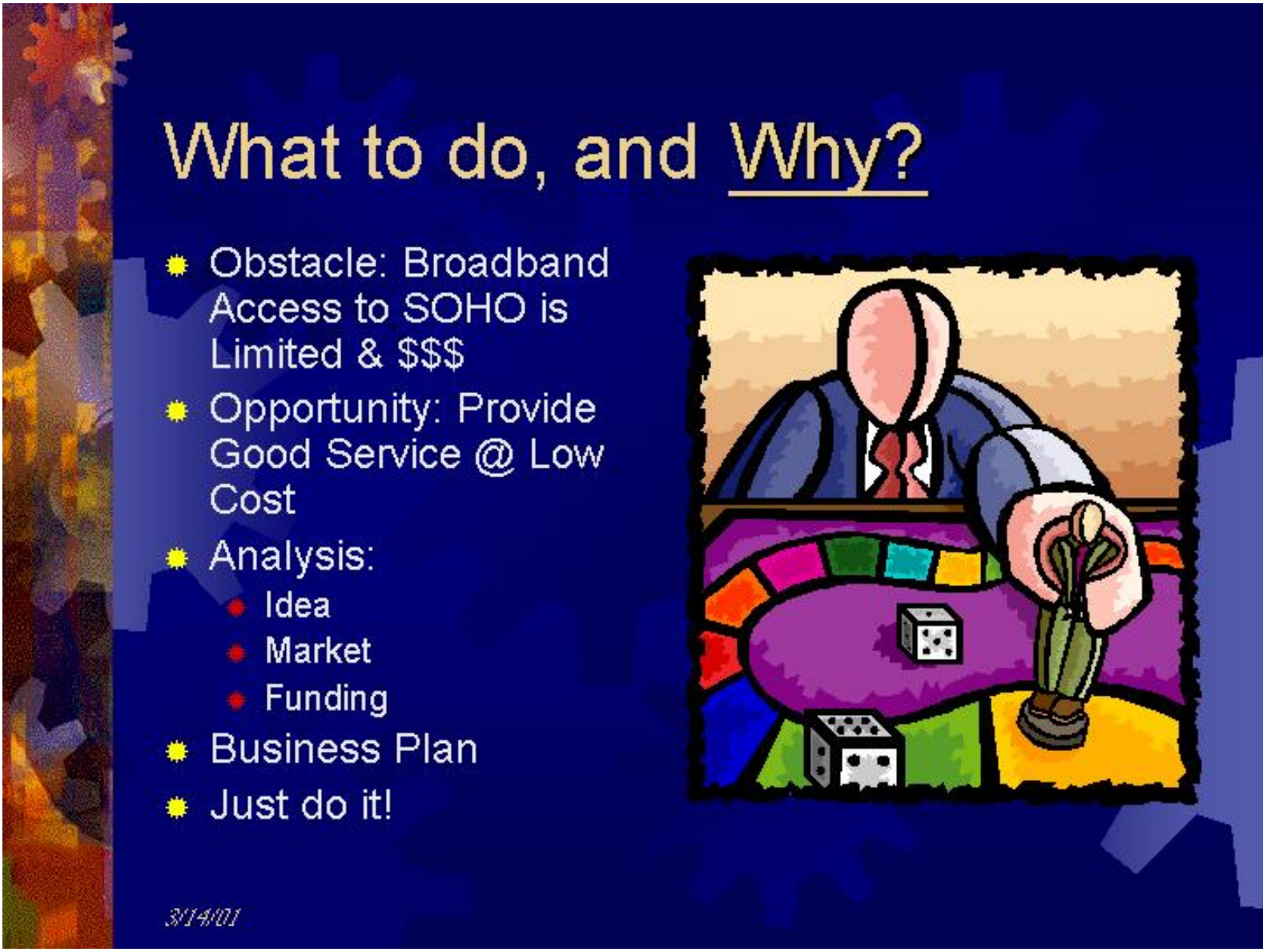

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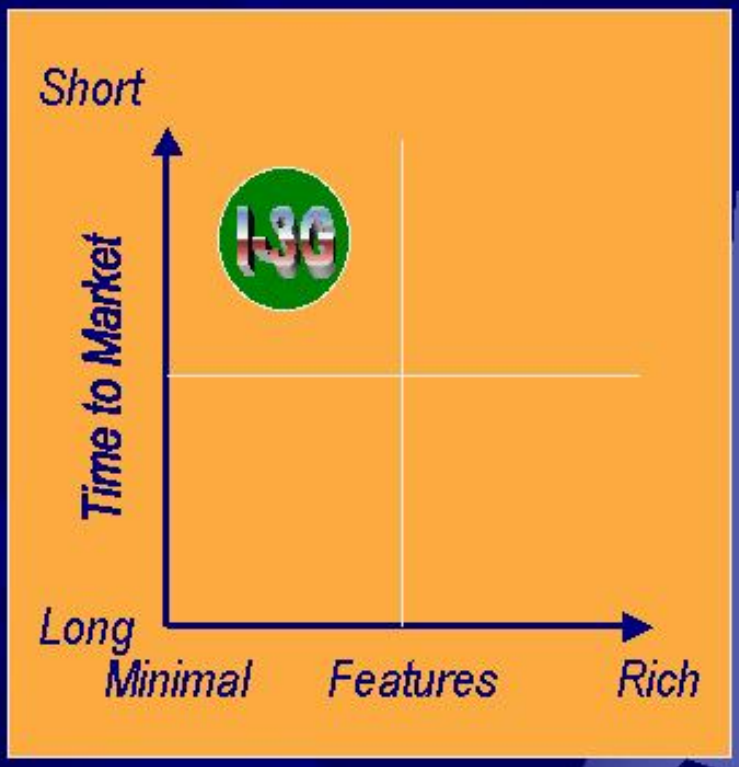
Our Business Model
Broadband pipe to the SOHO
Content? We don't care
Functionality:
Fast
Secure
Latest Technology
Where? Mi Buenos Aires querido…
How?: xDSL
Why?
TTM
$$$
Architecture
COMING SOON!
3/14/01

The Idea Exterminator

- Newness Map
- *Product Lifecycle*
- *Feature vs. TTM*



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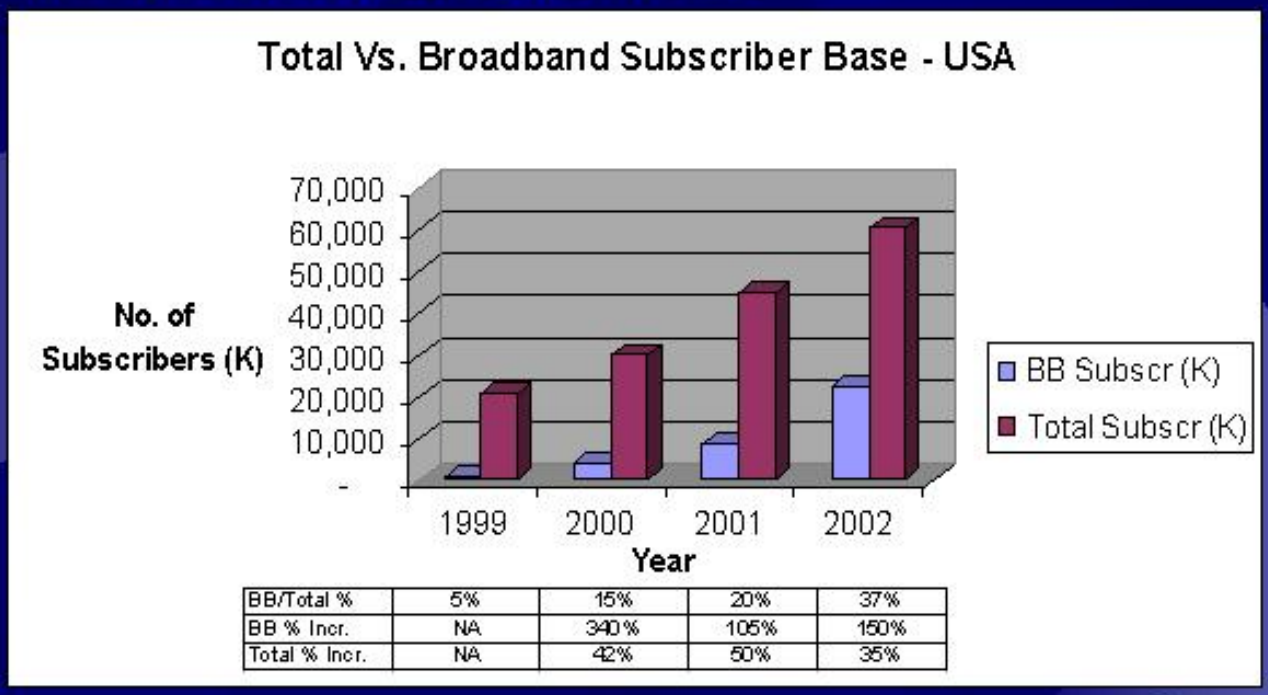
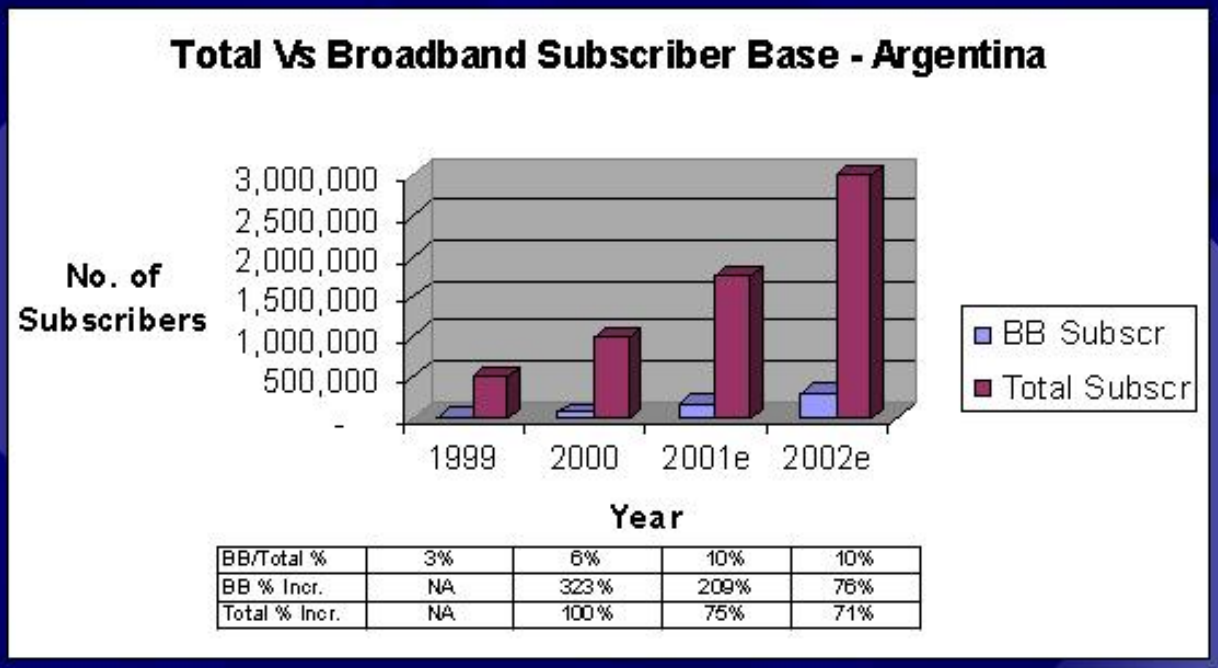
Broadband Market



BB/Total %	5%	15%	20%	37%
BB % Incr.	NA	340%	105%	150%
Total % Incr.	NA	42%	50%	35%

3/14/01

Broadband Market



BB/Total %	3%	6%	10%	10%
BB % Incr.	NA	323%	209%	76%
Total % Incr.	NA	100%	75%	71%

3/14/01

The Competition:

Company Name	Access Type	Price Range ($)	Speed Range (Kbps)	Number of Subscr.	Installation fees ($)
Telefonica	ADSL	100/month	256	5500	100
Telecom	ADSL	100/month	256	2000	100
ViaNet	ADSL	99/month	256	???	100
Multicanal	Hybrid Fiber Coax	70 to 100/month	56 to 512	3500	50
Fibertel	Hybrid Fiber Coax	70 to 99/month	56 to 512	62000	99
Velocom	Fixed Wireless	59 to 690/month	64 to 960	2000	99 to 390

3/14/01

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The Competition…

- *Market study shows:*
  - *Prices are "high" (typically over $100/mo.)*
  - *…speeds are low (under 500Kbps)*
- Bottle-neck does not reside in the "backbone"
- *What then is the problem?*

(where's the beef?)

3/14/01

Slide 21 of 23

Notes:

- Henoc Aguiar is encouraging companies to continue plans to provide DSL
  2) Covad was awarded 23 million in suit vs Pac Bell

$$ Funding $$$???

- How Much?
  - Cool $_ Million
- Source?
  - VC
  - Loan
  - Mortgage the House?
  - Credit cards?
  - Family & Friends
  - Classmates & Profs

3/14/01

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Business Plan

- Burn Rate:
  - ~$40K/month for 1 year
- Footprint
- P&L Charts Year 1, 2 & 3
- Subscriber base/Volume
- Mission/vision: “A Broadband Pipe in Every Home” (Pipe dream?)

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Internet Access in Argentina: Obstacles & Opportunities

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Author:

Business Plan

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$$ Funding $$$???

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Source?

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Enter: Our Partner, the Gov…

. ANEXO II: Reglamento de Interconexion

. The ILECs don't like to play ball…

. Who's boss?

- ILECs
- …or SeCom?

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Notes:

- Henoc Aguiar is encouraging companies to continue plans to provide DSL
  2) Covad was awarded 23 million in suit vs Pac Bell

The Competition…

• Bottle-neck does not reside in the “backbone”

- Prices are “high” (typically over $100/mo.)
- …speeds are low (under 500Kbps)

- What then is the problem? (where’s the beef?)

- Market study shows:

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The Competition:

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Broadband Market

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Broadband Market

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The Idea Exterminator

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- Product Lifecycle
- Feature vs. TTM

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Our Business Model

. Broadband pipe to the SOHO

. Content? We don't care

. Functionality:

- Fast
- Secure
- Latest Technology

. Where? Mi Buenos Aires querido…

. How?: xDSL

. Why?

- TTM
- $$$
- Architecture

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What to do, and Why?

. Obstacle: Broadband Access to SOHO is Limited & $$$

. Opportunity: Provide Good Service @ Low Cost

. Analysis:

- Idea
- Market
- Funding

. Business Plan

. Just do it!

-

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VeloCom – Business Model

. Commited to WL Technologies

. Committed to South America – Emphasis on Brazil

- Big Differentiators:
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- Last Mile Access

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VeloCom – SB & Revenue

Sorry, Profit & Loss statement not disclosed at this time

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VeloCom – Services

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-
-
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VeloCom - Origins

. Was formed in June 1998 as WLL International Inc. HQ: Colorado, USA

. Focus is on last mile access technologies to deliver bundled data, voice, Internet and video services to SOHO

. Velocom's total PE financing currently exceeds US$400M. Additionally it secured US$1.8B from its primary equipment vendors

. Operates in Argentina, Brazil and Uruguay

.

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VeloCom

- **Origins**
- **Commitment to Wireless & Latin America**
- **Coverage & Services**
- **Business Model**

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Computer Science at the UBA

. Founded in 1985--before in Math Dept.

. 1993-- degree to teach Computers in secondary schools

. 1990-- PhD degree

. 4400 students (or 1.3% of total) and expected to increase

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More on UBA

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PPT Slide

•

. UBANet: Distance (Off Campus) learning:http://campus.ubanet.com.ar

. The “Virtual Campus” offering certificates in 4 months--it’s interactive

. DAAD-UBA Exchange Program

•

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Universidad de Buenos Aires

- **Connectivity**
- **Servers/Web Sites**
- **Distance learning**
- **Inter-Institution co-op**

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Case Studies

. Universidad de Buenos Aires

- VeloCom

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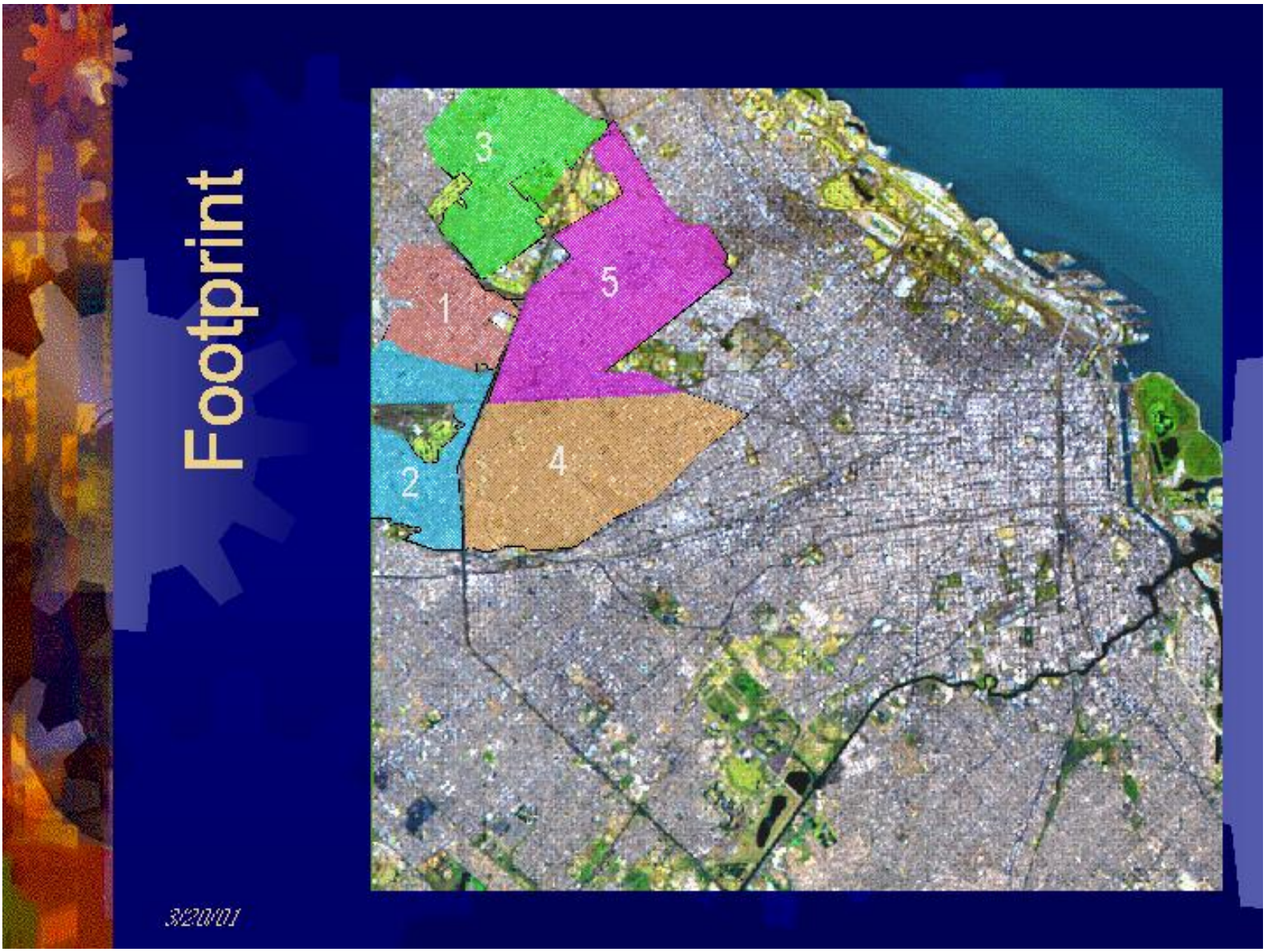
Footprint
3
1
5
2
4
3/20/01


Business Plan – Year 1
Zone 1 (San Martin)
Year 1
300,000
250,000
200,000
150,000
100,000
50,000
-
(50,000)
(100,000)
$$$
SB: 1780
1
2
3
4
Qtr
Profits
Total Costs
Total Revenues
3/20/01

Business Plan – Year 2

- Zone 1,2 & 3 (San Martin, 3 de Febrero & Vte Lopez)

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Business Plan – Year 3

Zone 1,2, 3, 4 & 5(San Martin, 3 de Febrero, Vte Lopez, Va. Devoto & Va. Pueyrredon)

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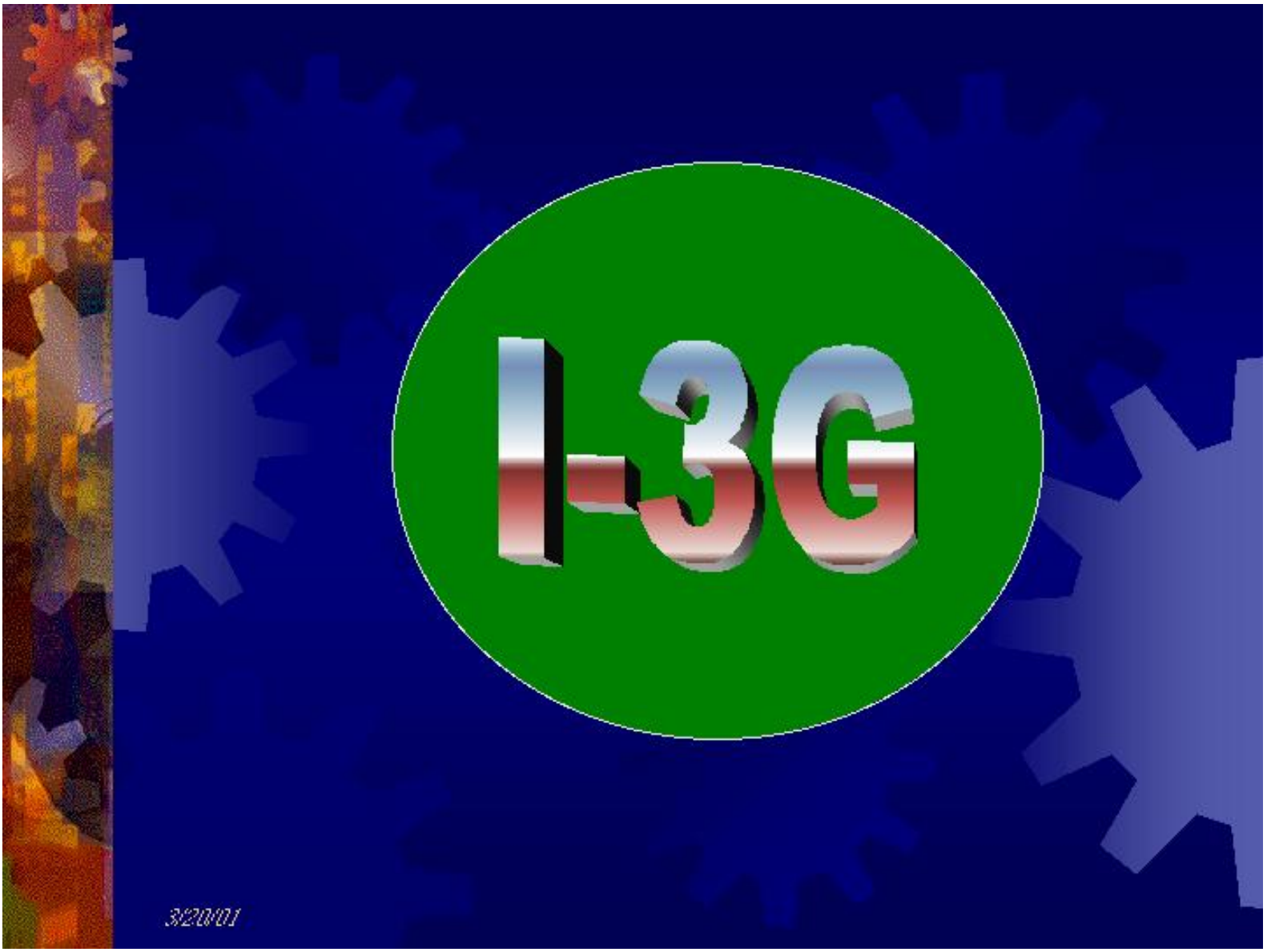
I-3G
3/20/01

PPT Slide

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Business Plan – Year 3

. Zone 1,2, 3, 4 & 5(San Martin, 3 de Febrero, Vte Lopez, Va. Devoto & Va. Pueyrredon)

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Business Plan – Year 2

. Zone 1,2 & 3 (San Martin, 3 de Febrero & Vte Lopez)

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Business Plan – Year 1

. Zone 1 (San Martin)

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Footprint

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