



Argentina-punto-com: An Analysis of the Development of the Dot-com Sector in Argentina

Ed Marcum
The Lauder Institute
April 10, 2001

Introduction.....	1
Section I – Foundations and Fundamental Drivers	5
Wealth.....	5
Education.....	7
Infrastructure	9
Public Policy	13
Government/Stability	16
Section II – Other Drivers	18
Timing	18
Venture Capital.....	20
Other Actors	22
Section III – Internet Sector Analysis	25
Recycled Business Models	25
The Meltdown.....	26
Changing Financial Markets	26
Section IV.....	33
External Issues	33
Cart Before the Horse?.....	34
Financial Oxygen	36
Internal Issues	38
Human Capital	38
E-Business Environment	41
Government Initiative.....	44
Conclusion	45
References:.....	50

“Es el típico caso de la liebre y la tortuga. Hoy somos la liebre, pero la tortuga sigue avanzando”

Silvia Bidart

Executive Director – Software and Information Technology

Argentine Association – (CESSI)

Introduction

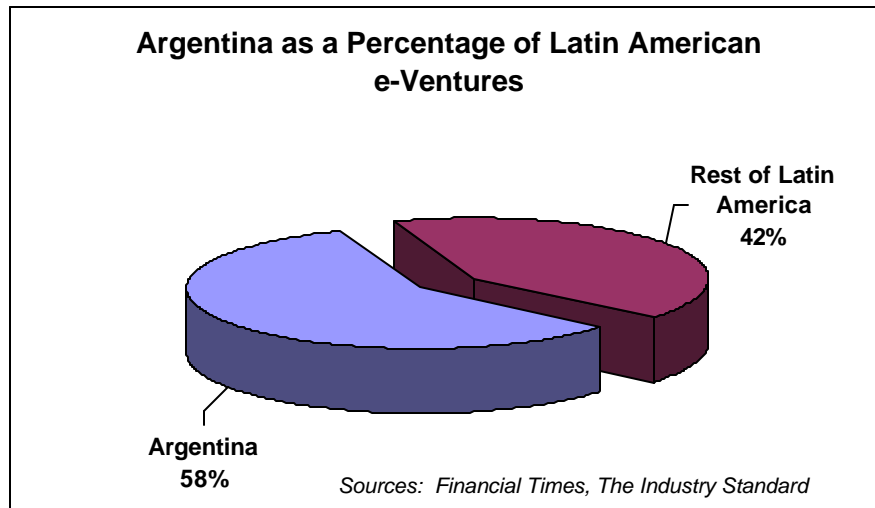
In the late 1990's Argentina jumped to the forefront of the Latin American e-business Internet revolution. Marked by a rapid growth of Internet companies, the country showed signs of developing a surprisingly competitive high tech sector. Journals, including the Financial Times, began touting Argentina as a high tech cluster and a potential “center of innovation... emerging as Latin America's premier generator of Internet start-up companies.”¹ And entrepreneurs like Roberto Cibrian, founder of Argentine Internet portal El Sitio, spoke of the country becoming a technopole “capable of developing a culture for Latin America developed by Latin Americans.”

By a number of measures, Argentina's participation in the dot-com explosion has been significant, particularly in relation to other countries in Latin America and the Spanish-speaking world. As of late 2000 Argentina had the fifth largest number of registered Internet domain names in the world.² At the height of the Internet boom in early 2000, it was estimated that of the approximately 600 Latin American based Internet startups, over 50% (or some 350 firms)

¹ Ebusinessforum.com. 2001. “Argentina: New dot-coms Toughen the Competition”

² Catan, Thomas. 2000. “Internet Euphoria in Argentina” Financial Times, Survey - FT-IT. November 1, 2000

were established in Argentina.³ A recently published “census” of Internet activity put together by Microsoft, McKinsey and Allende and Brea calculated 485 Internet companies based in the country by the end of November 2000. It has been projected that, at one point, as many as 6,000 to 8,000 full time workers were employed in the sector.⁴



Not only has Argentina been influential in terms of numbers, it has also been the source of many innovative and high-profile Latin American Internet success stories. In March of 2000, Argentine twenty-somethings, Constancio Larguia and Wenceslao Casares, became multimillionaires when they sold 75% of their three year old financial services site, Patagon.com, to Banco Santander for \$528 million. Later, in December of that same year, Cibrian and co-founder Roberto Vivo-Chaneton, made history by becoming the first Latin American Internet company to successfully IPO on the NASDAQ, raising over \$130 million for offering up 20% of El Sitio. Leading Latin American auction sites Deremate! and MercadoLibre, founded by Harvard and Stanford MBA's respectively, made headlines by grabbing strong market share and

³ Helft, Daniel. 2001. "PC's for the People." *The Industry Standard*. May 15, 2000; Catan, Thomas. 2000. "Internet Euphoria in Argentina" *Financial Times*, Survey - FT-IT. November 1, 2000;

⁴ Depending upon the source: Microsoft, McKinsey and Allende and Brea estimate 6,000. *Apertura* magazine calculated over 8,000

receiving large amount of venture capital funding. In the battle for the “eye balls” of Internet surfers the Argentine Internet sector has also excelled. One recent study showed that, at one point Argentina was home to 11 of the 15 most visited Spanish-language sites.⁵

But now that the Internet bubble has burst what remains? Was Argentina’s success in the late 1990’s the beginning of a legitimate high tech cluster and the potential building block for future regional success? Clearly Argentina possessed certain comparative advantages that provided a head start and enabled it to prosper in the speculative early stages of the Internet bubble. But how well positioned is the country to emerge as a long-term leader in a knowledge based global economy?

In the following paper I will evaluate the development of the Internet sector in Argentina. I will divide my analysis into four parts.

First, I will identify the factors that help to explain the rise of the dot-com entrepreneurs in Argentina in the late 1990’s. Rather than attempting to assess the overall strength of the Argentine high-tech sector, I will instead focus on some of the key factors that enabled Argentina to jump to the forefront of e-business in the Spanish-speaking world. I will attempt to understand Argentina’s relative position in Latin America in terms of certain key drivers including socioeconomic factors, education and literacy levels, infrastructure development and governmental policy.

Moving beyond traditionally defined drivers of internet development I will, in the second section, take a closer look at more qualitative explanations of early success by considering the historical, political and social context of Argentina’s internet progress. This may help explain how the dot-com’s were able to crop up in spite of a difficult recessionary economic period

⁵ Financial Times. 2000. “Argentina 2000: Country Brief.”

suffered in the country in the last three years. I will also focus on new factors and actors such as the arrival of venture capital and the emergence of synergistic organizations and complementary support services and will investigate the extent to which they promoted cooperation or created synergies or economies of scale among clustered firms.

In the third section I will provide a more in depth analysis of Argentina's Internet sector. I will look at the types of companies that emerged and will evaluate the fall-out in the wake of the dot-com melt down. With the ultimate goal of evaluating the resiliency of Argentina's high tech sector, I will attempt to piece together a picture of the current market conditions. I will investigate the changes in the Argentina Internet landscape including the sectors that have been hardest hit, the number of companies that have gone under, those that haven't received second round financing and those that have consolidated or been bought out. I will also look at the changes in funding flows both in terms of aggregate numbers and in the types of projects being funded.

Finally, I will attempt to evaluate Argentina's high tech sector going forward. Argentina may have started out the race as "the rabbit" but is the country well positioned for the long run? I will look at the long-term prospects of the Internet as well as the problems and concerns going forward. The goal is to disentangle the reality from the hype and identify areas where Argentina needs to catch up as well as areas where it can build upon its head start. How solid are the countries fundamentals in terms of e-business readiness and the ability to transition into a knowledge based economy? In this section I will look at both the internal issues that confront the development of e-business as well as the Internet sector as a whole. I will then look at Argentina's external challenges in Latin America and globally.

Section I – The Foundations and Fundamental Drivers

Clearly Argentina possesses certain comparative advantages that provided a head start and created the necessary conditions to enable Internet ventures to prosper in the speculative initial stages of the Internet bubble. Argentina's relative position in Latin America in terms of key drivers is often cited in explaining the early success.

A critical piece in the development of a thriving Internet sector is connectivity. Using overarching measures of development, such as the United Nations Development Program's Human Development Index (HDI), recognized scholars on Internet diffusion have pointed to wealth and education as key socioeconomic drivers to connectivity.⁶ Accordingly, it would make sense to analyze Argentina's position in these categories to see if they do indeed uncover relative advantages for the country.

Wealth

Looking at GNP per capita as a measure for wealth, Argentina would appear a prime candidate for leadership in Internet development. Argentina's 1999 GNP per capita of \$11,324 (PPP) stacks up favorably with the rest of Latin America.⁷ However, while not as extreme as in many other Latin American countries, income distribution and the wealth inequalities are severe and have been widening in recent years. According to the World Bank, close to 29% of the population is below the poverty line.⁸ In Buenos Aires it is estimated that the richest tenth of the people share 36% of total income while the lower third of the population receives 8.2%.

Research has shown that Internet penetration, in addition to being highly correlated with

⁶ Hargittai, Ester. 1999. "Weaving the Web: Explaining the differences in Internet connectivity among OECD countries." *Telecommunications Policy* Vol 23 November-December 1999

⁷ International Bank for Reconstruction and Development. 2000. "2000 World Development Indicators

⁸ The poverty line is an estimated intake of less than \$160 per month

purchasing power or GNP per capita, is price sensitive enough to be considered a luxury good in most of Latin America.⁹ The profile of the typical Argentine Internet user reflects this.

According to a recent study, he is male (57%), 29 years of age, lives in the greater Buenos Aires area (68%), has been using computers for over 5 years and is from the higher C1/C2

socioeconomic group (94.5%).¹⁰ Analysis by Lehman Brothers, looking at 1998 data, points out

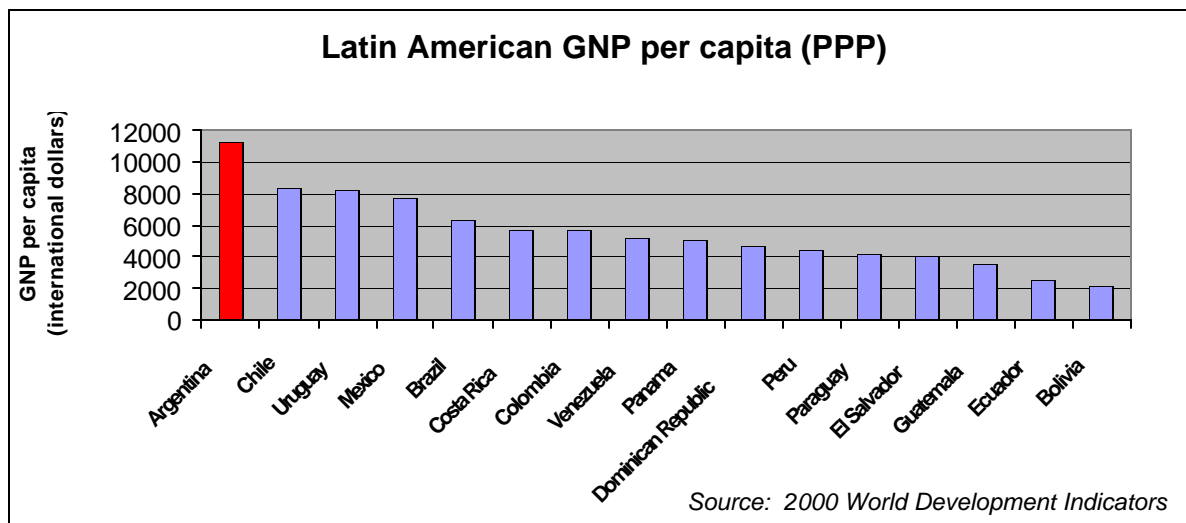
that Internet penetration in Latin America has taken place at the same pace as the United States within the context of per-capita wealth.¹¹ In 1998 Internet penetration in the United States was

23% while the corresponding number in Latin America was just under 1%. Interestingly, these percentages mirrored the portion of the population generating yearly income above \$40,000 in

the respective regions. Internet penetration within the high-income segment of society in

Argentina is expected to grow from a current 23% to 53% by 2003 (reaching penetration rates similar to the United States) while the low-income segment is predicted to reach no more than

4% by 2003.¹² Thus Argentina's troubling income inequalities present a potential limit to higher levels of Internet penetration.



⁹ Guillén, Mauro and Sandra Suarez. 2001. "Developing the Internet: Entrepreneurship and Public Policy in Ireland, Singapore, Argentina and Spain". *Telecommunications Policy*. Forthcoming

¹⁰ Prince & Cooke. 2000. "Internet y Comercio electrónico en Argentina." August 2000

¹¹ Lehman Brothers. 2000. "Latin America Online: Sizing the Internet in Latin America." July 2000

¹² Study performed by Katz, Booz and Hamilton, 1999

Education

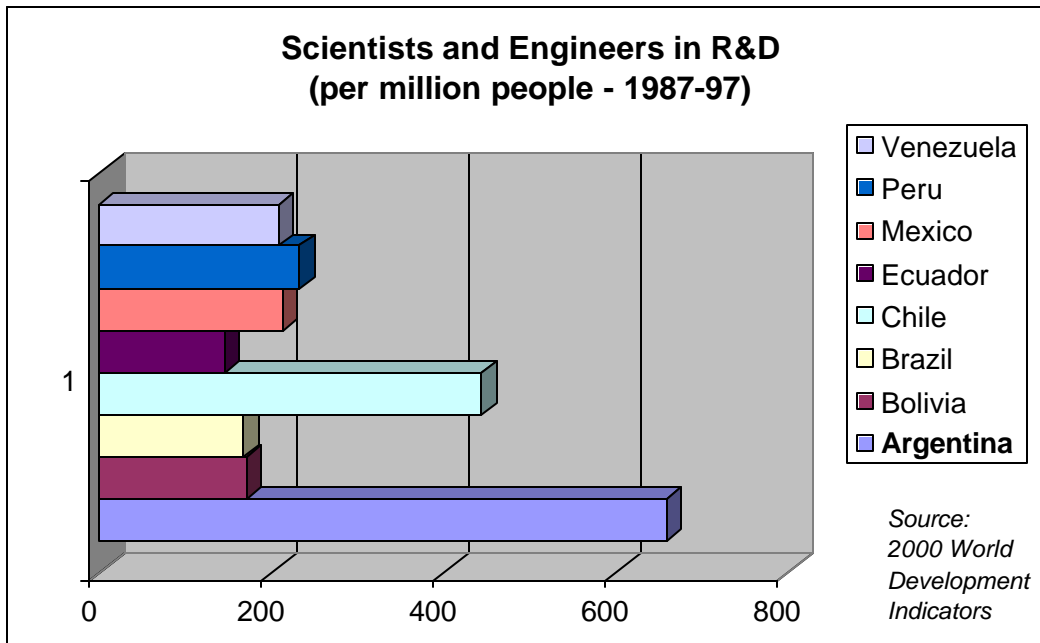
Since the founding of the nation and the vision of former president and education secretary Domingo F. Sarmiento, Argentina has taken pride in developing one of the strongest education systems in Latin American and one that is competitive with many wealthier OECD nations, according to a number of traditional educational indicators. Adult literacy rates are 98%. Argentina has lower average class sizes for primary and lower secondary education - - an important factor influencing student achievement. In Argentina there appears to be near universal participation in education at a wide range of ages. Participation rates are above 80% for the final year of compulsory schooling (which is obligatory until the age of 15). Argentina also has one of the highest lower secondary school entry ratios at 93%.¹³ In measures of years of schooling, Argentina has one of the highest average number of years of expected schooling for primary through tertiary education in Latin America at 12.6 years. According to an OECD study estimating “expected years of schooling under current conditions”, Argentina’s average of 15.4 ranks just behind the OECD average of 16.4

More important than general education statistics, the perception that Argentina is positioned favorably among Latin American nations in terms of knowledge-based workers appears to hold true. In fact, according to a Metricnet study (which used criteria including the availability of engineers and qualified information technology worker in the country’s labor market, availability of competent senior management and the net enrollment in higher education) Argentina ranks number ten, well ahead of other countries in Latin America and even besting countries such as Germany, Israel and the UK.¹⁴ While the technological savvy of a population is difficult to quantify, a look at the 2000 World Development Indicators confirm the perception

¹³ OECD. 2000. “Education at a Glance: OECD indicators, 2000 edition.”

¹⁴ The Global New E-commerce Index

that Argentina is well positioned vis-à-vis its Latin American neighbors in terms of a quantity and quality of knowledge based workers to supply the dot-com boom. Argentina's 660 Scientists and engineers in R&D per million people is significantly greater than any other Latin American country and Argentina's numbers in Scientific Journal Articles and Patent applications are the strongest in Spanish-speaking Latin America.



Communications Infrastructure

From an information/communications infrastructure stand point, Argentina is also favorably positioned. Looking at one key variable driving Internet connectivity, telephone line penetration, Argentina leads Latin America with 21.53 lines per 100 people.¹⁵ Using other indicators of the Argentine preparedness with the “Information Age”, the country has 289 television sets and 681 radios for every 1000 people - - well ahead of most countries on the continent.¹⁶ Argentina also has the highest cable penetration in the region with over 60% of households subscribing. This could be critical should broadband access prove to be a feasible alternative in Latin America. To date this avenue has not been fully explored. As of November 2000 leading Cable Modem Service providers, CableVision and Multicanal, had roughly 30,000 subscribers combined and had fees of over \$100 per month.¹⁷ While many argue that cable modems will loose out to DSL as the preferred means of connection, some market analysts are still optimistic that Internet access over the TV will remerge in Latin America to tap into a reservoir of latent demand in the region.¹⁸

More importantly, Argentina leads Latin America in personal computer penetration rates. The International Telecommunications Union estimated 4.92 PCs per 100 inhabitants in 1999, while according to IDC, in late 1999 Argentina had the highest personal computer penetration rate in Latin America at 6.2% of the population, as well as the highest growth prospects through 2003 (see Fig.1.3). Imports of computer and IT equipment continue to grow, and jumped 62% between May 1999 and May 2000.¹⁹

¹⁵ International Telecommunications Union. 2001. “Telecommunications Indicators.” www.itu.int

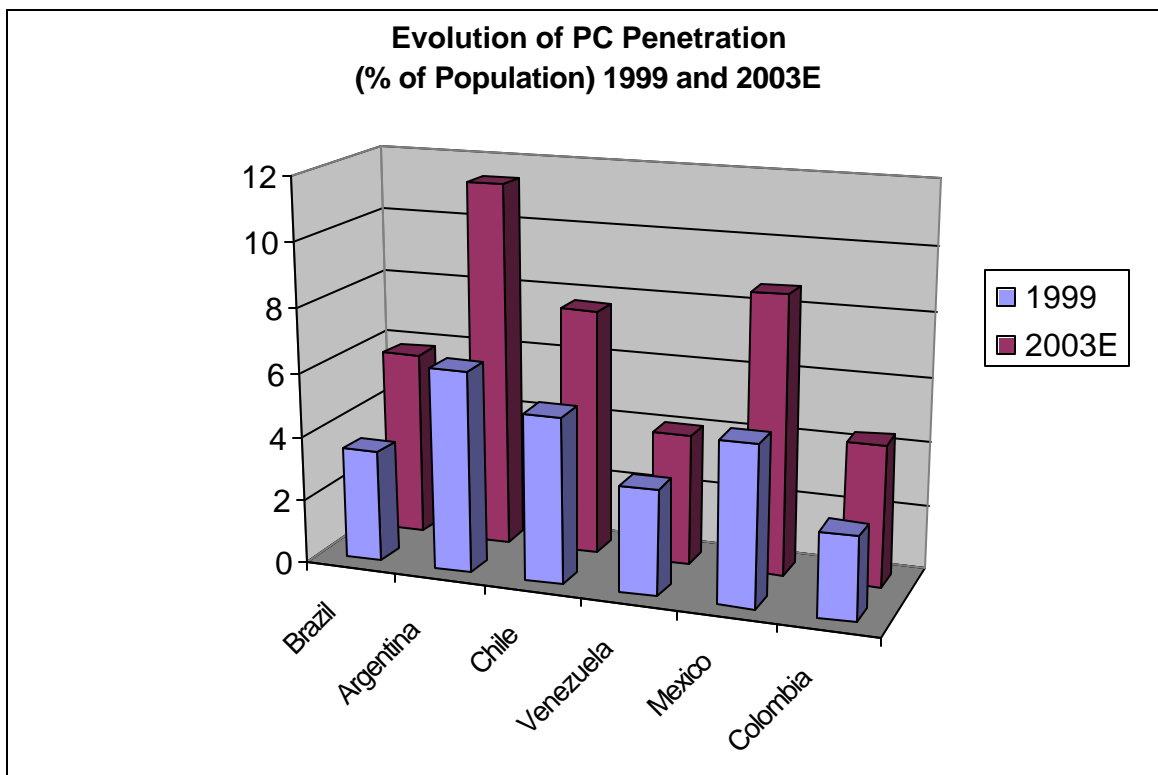
¹⁶ International Bank for Reconstruction and Development. 2000. “2000 World Development Indicators

¹⁷ Jupiter Communications. 2001. “An Untapped Market: Argentina’s Broadband market Awaits Provider Initiatives” January 2001”

¹⁸ Jupiter Communications. 2001. “Free Access over TV Shows Promise, Despite Content Conundrum”

¹⁹ eMarketer. 2001. www.emarketer.com

Argentina is also a leader in another area that may have significance in the future – wireless phone connectivity. In 2000, there were some 12.12 Cellular Mobile phone subscribers per 100 inhabitants in Argentina - a 37.6% penetration rate of total telephone subscribers.²⁰ A 2000 Lehman Brothers report estimates that by 2005 mobile phones in Latin America will outnumber PC's by almost three to one with some 154 million mobile phones versus 56 million PC's.²¹ Because of the widespread adoption, relatively low cost and ease of use, mobile phones should help boost Internet access in the region. Jupiter Research estimates that Latin American mobile Internet access will soon be as widespread as access from a PC, with more than 50 million people regularly going on line from their mobile phones by 2005.



²⁰ International Telecommunications Union. 2001. "Telecommunications Indicators." www.itu.int Refreq.com "Top International Wireless Markets 2000"

²¹ Lehman Brothers. 2000. "Latin America Online: Sizing the Internet in Latin America." July 2000

Critical infrastructure indicators of Internet readiness are Internet penetration rates and Internet hosts per 10,000 people. Here, Argentina does not appear to have developed as favorably as expected. Granted, the country's 2% Internet penetration rate into the overall population does not appear to be far behind the region's leaders Chile and Brazil - both with penetration rates of 2.3%.²² And in terms of hosts, Argentina's 38.95 hosts per 10,000 people lead Latin America. Moreover, after the passage of certain key policies to lower the cost of Internet access (discussed in greater detail below), the country has been experiencing the fastest growth in the region.

However, a closer look reveals certain weaknesses. While 6% of the population owns a PC, only 31% of those users access the Internet, one of the lowest rates in Latin America. Furthermore, while the discrepancy between Argentina and Brazil may appear small (2% vs. 2.3%) if one considers that average income in Brazil is less than half that of Argentina and that PC penetration in Brazil is only 3.5% (almost 3 points lower than in Argentina), Argentina's growth appears rather unimpressive.²³

Internet Penetration in PC Base	
Brazil	67%
Colombia	61%
Venezuela	48%
Chile	44%
Mexico	32%
Argentina	31%
Latin America	46%
USA	93%

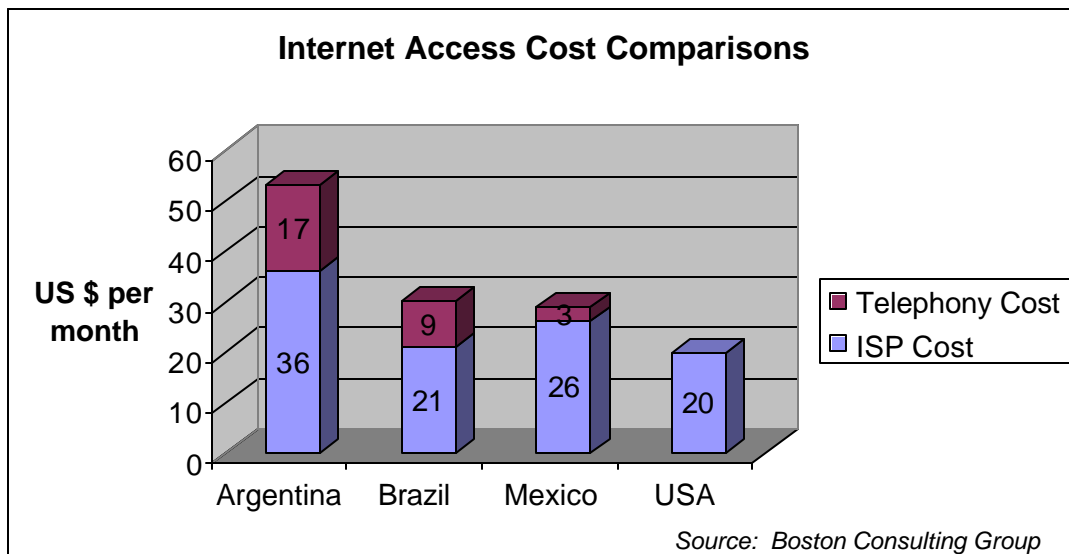
Internet Penetration in Population	
Brazil	2.3%
Chile	2.3%
Argentina	2.0%
Venezuela	1.6%
Colombia	1.6%
Mexico	1.6%
Latin America	1.6%
USA	24.0%

Source: IDC

²² IDC. 2001. www.idc.com

²³ Analysis taken from: Credit Suisse First Boston. 2000. "Latin America Internet Industry Update." February 2000

Two factors that help explain this low rate are historically high ISP and telephony costs. In Argentina, as in most of Latin America, the costs associated with getting on line are often prohibitively high, a large portion of which is attributable to local telephone charges which are billed on a per minute or per pulse basis as opposed to a the fixed monthly charge for all local calls in the United States. A study by the Boston Consulting Group comparing Internet access costs among Latin American countries showed that Argentina, at \$53 per month, was significantly more expensive than other countries in the region. Another study done by IDC estimated average monthly Internet access charges in Argentina to be as high as \$71.41, just slightly below Venezuela for the highest in Latin America.



Public Policy

Competition and privatization have long been viewed as important drivers for a country's telecommunications sector.²⁴ D'Souza and Megginson have further emphasized the improvements in performance metrics that accompany privatization -- such as efficiency and the extent of lines in service.²⁵ Argentina was an early, though modest, mover in Latin American telecom privatization. In 1990 Argentine privatization and partial deregulation of the telecommunications sector occurred when the national phone company Entel was split into two territorial monopolies that were controlled by consortium led by Spain's Telefónica and Telecom of Italy, respectively. The two monopolies were given exclusive licenses through 1999 that were linked to targeted infrastructure investment levels. These appear to have been successful with investment in infrastructure reaching \$16.7 billion between 1990 and 1998 and telephone lines growing from 3.6 to 8 million.²⁶

While PC and Internet penetration rates are still relatively low, Argentina has taken a number of public policy initiatives to foster higher Internet access that have been highly successful and that lead many market analysts to expect rapid growth in the country in the coming years. Work by Petrazzini and Guerrero points to two main policy decisions -- a reduction in the price of leased lines and a reduction of tariffs for local calls through the creation of a dial up scheme for Internet access calls. These drivers took Argentina from one of the

²⁴ Oxley, Joan and Bernard Yeung. 2000. "E-commerce Readiness: Institutional Environment and International Competition." *Journal of International Business Studies*

²⁵ D'Souze, Juliet and William Megginson. 1999. "The Financial Operating Performance of Privatized Firms during the 1990's." *Journal of Finance*. Vol 54

²⁶ Guillén, Mauro and Sandra Suarez. 2001. "Developing the Internet: Entrepreneurship and Public Policy in Ireland, Singapore, Argentina and Spain". *Telecommunications Policy*; Petrazzini, Ben and Agustina Guerrero. 2000. "Promoting Internet Development: The Case of Argentina." *Telecommunications Policy* Vol 24 pp. 89-112

laggards of Internet penetration (in terms of Internet users and Internet hosts per 10,000 people) to one of the leaders Latin America in the period between 1993-1999.²⁷

Government regulators have attempted to play an active role in fostering the development of e-business. In 1998 officials mandated that the major ISPs reduce their connection fees by nearly half and created a special dial-up number for Internet calls – 0610 – which created savings of up to 58% for users connecting to the net in major metropolitan areas.²⁸ Long-distance service was liberalized in November 1999. The deregulation of local telephone service, which took place in November 2000, is expected to greatly increase the number of ISPs and thus Internet-based businesses. It is envisioned that increased competition will lower consumer charges. This already appears to be with case, with access fees dropping precipitously and some ISPs now offering monthly access for less than \$10 – far lower than the average rate of \$30 in 1998.²⁹

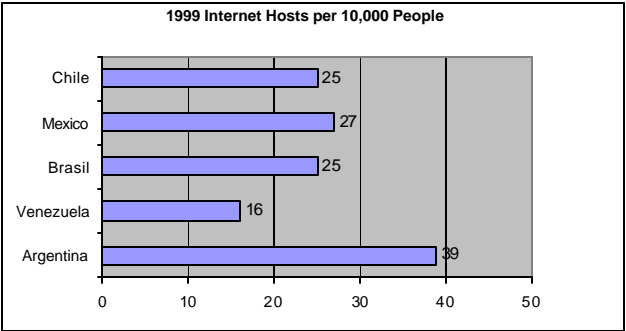
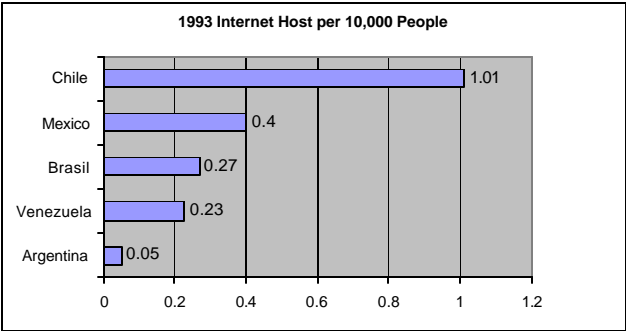
²⁷ Petrazzini, Ben and Agustina Guerrero. 2000. "Promoting Internet Development: The Case of Argentina." Telecommunications Policy Vol 24 pp. 89-112

²⁸ ibid

²⁹ Ebusinessforum.com. 2001. "E-business readiness rankings: Argentina at a Glance."

From Worst to First

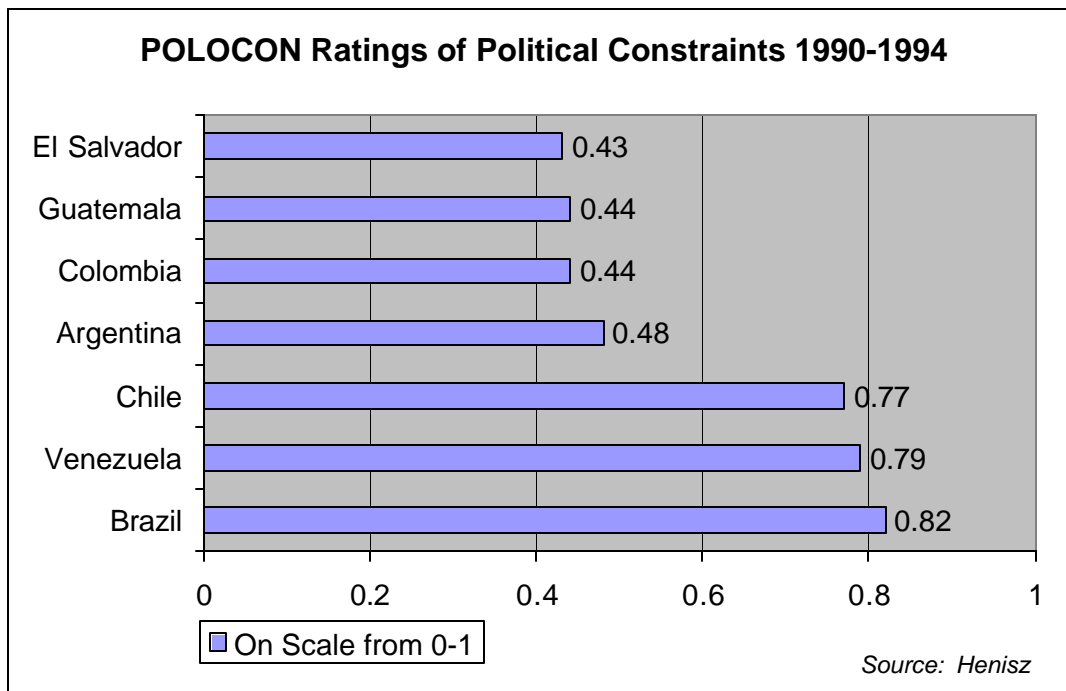
Growth in Internet Hosts 1993-1999



Source: ITU

Government/Stability

Governments can play a large role in creating market conditions conducive to entrepreneurship. Research has shown that when governments can develop predictable conditions for doing business in a country, entrepreneurs have incentives to invest (Henisz). This is accomplished through a credible commitment to a set of policies, rules and institutions that can be taken for granted.³⁰ Henisz proposes that conditions for investing and doing business are predictable to the extent that political actors and policy makers are constrained by one another. Combining spatial modeling techniques and political theory Henisz has developed a cross-national model for measuring the link between the structure of a nation's political institutions and the preferences of the actors who populate them. This yields a political constraint, or POLOCON ranking, that measures the credibility of different institutional environments.



³⁰Summary of Henisz work taken from: Guillén, Mauro and Sandra Suarez. 2001. "Developing the Internet: Entrepreneurship and Public Policy in Ireland, Singapore, Argentina and Spain". [Telecommunications Policy](#).

According to Henisz' POLOCON ranking, Argentina does not stack up favorably with other countries in Latin America. During the most recent year of the rankings between 1990-1994 Argentina's 0.48 score (on a scale of 0-1 with one being most desirable conditions and zero being least desirable) ranks well below Brazil (0.82), Chile (0.77) and Venezuela (0.79) and is only marginally stronger than Colombia (0.44), El Salvador (0.43) and Guatemala (0.44). Still another measure, IMD's World Competitiveness yearbook's ranking of "Risk of Political Instability" among 47 nations, places Argentina near the mean (24) but ahead of most countries in Latin America and in front of countries like Japan, Belgium and Italy. However, it sees serious faults in Argentina's institutional structure. For instance, the legal framework is seen as detrimental to competitiveness and is thus ranked 40th among the 47 nations in the survey. The yearbook also gives low marks to Argentina's political system concluding that it is not well adapted to today's economic challenges and ranking it 38. Further black marks include Argentina's bureaucracy that is charged with hindering business and is also ranked 38. Bribery and corruption are seen as serious problems (given a 44); competition laws prevent unfair competition (47); justice is unfairly administered (42); and personal security and private property are not seen as adequately protected (43). In a similar survey put together by the Global Competitiveness Report 2000 in ranking 59 nations Argentina again scores low on competence of public officials (56), public trust of politicians (52) Anti-monopoly policy (54) and Judiciary Independence (54).

Section II – Other Drivers

While the traditional drivers outlined above gave Argentina certain advantages in the early going, there were other more allusive and qualitative reasons that helped to explain Argentina's role in the internet boom.

Timing

Timing was certainly one of those reasons. The technological innovations that made the internet possible coincided fortuitously with a window of opportunity in Argentine history. After a long, dark period, Argentines, -- especially the young—were eager for a new start.

As Matias Mosse, president of the Argentine Internet incubator Aper.net explains, the dot-com boom “occurred in Argentina also because of more "profound" reasons than the ones on the surface - like connectivity, etc.” In particular, Argentina's tumultuous recent history has dramatically influenced every political, economic and social aspect of Argentine life. The Internet boom is no exception.

Following the heavy state involvement and populism of Peron, Argentina fell into economic decay that led to a series of military coups and dictatorships, culminating in the state-terrorism of the “dirty little war” in which some 10,000 - 30,000 people "disappeared." While democracy was restored under President Alfonsin in 1983-89, the economy suffered and fell victim of chronic hyperinflation. President Menem, who came to power in 1989, successfully put an end to hyperinflation by pegging the Argentine peso to the dollar and his administration, marked by surprisingly neo-liberal economic policies and heavy privatization, created strong economic growth through the mid 1990's. However, the Menem years were tainted by corruption and cronyism, a widening income gap and, particularly during the second

administration, high levels of unemployment and slower economic growth. The cumulative effect of this has been the creation of a "lack of faith" and overall pessimism among the general population. In fact, a recent survey conducted by Gallup to measure pessimism found that only 31% of Argentines greeted 2001 with optimism, ranking the country ahead of only Bolivia (43%), Colombia (43%) y El Salvador (55%) in Latin America. This attitude is particularly strong among young people who have been among the hardest hit during the recent 3 year recession. With unemployment rate hovering above 15%, many young Argentines are confronted with limited professional opportunity. Some have given up hope. A country made up of largely Spanish and Italian immigrants, Argentina has seen record numbers of immigrants go back to Europe and it is estimated that the majority of those leaving have been the younger and more skilled workers.³¹ So, within this context, the arrival of the Internet gold rush tapped into a pent up entrepreneurialism which, according to Mosse, "was like a new bright & wealthy window for lots of people."

There is also little doubt that at least part of Argentina's dot-com explosion had to do with the good fortune of being at the right place at the right time. Not only were many Argentine firms early movers in the context of Latin American, they were also quick enough to market to tap into the height of the "irrational exuberance" of the global (and most notably the US) economy – taking advantage of the window of opportunity to secure financing when the market was hot. Nearly half (43%) of Argentine Internet start-ups were launched in the first semester of 2000, when technology shares quoted on the US-based NASDAQ exchange were still strong.³² When the downturn in the market occurred in the second half of 2000, funding became significantly more difficult.

³¹ Kraus, Clifford. 2000. "With No Hope for Economy, many Argentines are Leaving." New York Times. November 24,2000

³² Microsoft, McKinsey & Co and Allende & Brea

With a wealthier, better educated domestic market than other Latin American countries, it is not surprising that Argentina had some of the strong content producers already in place, which also translated into being an early mover. Argentina's 123 daily newspapers per 1000 people is tops in Latin America and certain publications, such as soccer magazine "El Grafico" are considered some of the highest quality content producers in the Spanish-speaking world.³³ The distribution of the types of Internet companies that came out of Argentina reflects this. Online publications (16.6%) coupled with entertainment sites (14.7%) represent the largest share of Argentine start-ups, while e-commerce sites make up the next biggest category (14.7%).³⁴

Venture Capital

Another key catalyst to the dot-com boom in Argentina was the arrival of venture capital in Latin America in the late 1990's. Venture capital is critical for entrepreneurs and is a particularly important source of funds for building and expanding small high-technology companies.

In the 14 months between April 1999 to June 2000 venture capital arrived in Latin America in a big way. It is estimated that the amount of private equity and venture capital investors put into Internet startups in Latin America was close to \$2 billion – a figure almost triple that of the previous year.³⁵

Argentina was one of the key recipients of the VC explosion in 2000, garnering an estimated accumulated investment of over \$600 million.³⁶ In addition to at least a dozen smaller funds set up by local businessmen who have poured millions of dollars into online ventures,

³³ International Bank for Reconstruction and Development. 2000. "2000 World Development Indicators"

³⁴ Microsoft, McKinsey & Co and Allende & Brea

³⁵ Bain study referenced in: Helft, Daniel. 2001. "Net Ventures Grow Cold in Latin America." The Industry Standard. January 31, 2001

³⁶ Microsoft, McKinsey & Co and Allende & Brea,

some of the larger international venture capitalists involved in Argentina include Hicks, Muse, Tate & Furst, Chase Capital Partners, Flatiron Partners, the Exxel group and global financier George Soros' fund.

Venture capital poured into Argentina in the latter half of the 1990's for several reasons. Many investors were attracted by the return of democracy and political stability to the region, sound macroeconomic policy and favorable regulatory environment and the expectation of superior rates of return often sought in emerging markets.

Venture capitalists were particularly attracted to the growth potential of the Latin American Internet market. According to Jupiter Communications, the number of Latin American Internet users is expected to nearly triple to 24 million people by 2003 and IDC predicts that by 2005 there will be 75 million users in the region. More importantly, the value of business-to-consumer (B2C) transactions will balloon from \$129 million this year to \$2 billion by 2003, and the value of business-to-business (B2B) transactions will soar from \$330 million this year to \$6 billion in three years, Jupiter and IDC say.

However, according to many in the industry, the seminal event influencing venture capital funding flows in Argentina was not the trail blazing example of an Argentine start-up but rather the successful 1999 Nasdaq IPO of StarMedia, based in New York and founded by Uruguayan Fernando Espuelas in 1996. StarMedia showed both entrepreneurs and VCs that a successful exit strategy could accompany a Latin American Internet play.

Other Actors

Literature in the study of high tech clusters such as Silicon Valley and Boston's Route 128 have focused on the flexible, cooperative and dynamic culture surrounding innovative environments and the role of organizations that promote networking and interaction within clusters.³⁷ One such organization to emerge from Argentina is the not-for-profit group Endeavor - a group focused on assisting entrepreneurs in developing their businesses. It functions as a link between investors and companies. New York based, Endeavor arrived in Buenos Aires in 1998. By helping entrepreneurs hone their professional skills, develop their businesses and raise capital to expand, Endeavor bridged the gap between entrepreneurs and investors has served as a screen for top VC's entering the Argentine market. The organization played a key role in many of the country's Internet success stories and many of the key people in the sector are involved with Endeavor. An organization that has been called the force behind "the most powerful network of entrepreneurs and investors in Latin America," Endeavor's formula appears to be based on bringing together blue chip investors with entrepreneurs with strong academic credentials.³⁸

Some of Argentina's most high profile startups are involved with Endeavor – among them Decidir.com Mercadolibre, Officenet and Patagon.com, who's founder, Wenceslao Casares, reportedly was turned down by over 30 investors before arriving at Endeavor where he was subsequently able to raise over \$60 million from Chase Partners.

³⁷ Saxenian. Annalee. 1994 "Lessons from Silicon Valley." *Technology Review*. July 1994. pp.42-52

³⁸ Helft, Daniel. 2000. "Spreading the Wealth" *The Industry Standard*. December 11, 2000

Endeavor Success Stories

Company	Founder(s)	Education/ Experience	Early Stage Funder(s)	\$\$	Year Selected into Endeavor	# of employees
Patagon.com	• Wenceslao Casares	• University of San Andres (turned down Harvard)	• Chase Capital Partners • others	\$60 m	August 1998	650+
Mercadolibre.com	• Marcos Galperin, • Hernan Kazah	• Stanford Graduate School of Business – MBA (both)	• Chase Capital Partners • Flatiron • Hicks, Muse Tate and Furst	\$7.6 m	October 1999	180
Officenet	• Andy Freire, • Santiago Bilinkis	• University of San Andres (both) • Proctor and Gable (both)	• BancBoston Capital • Banco Santander • TH Lee Investments • Latin America Enterprise Fund	\$34 m	N/A	180
Agropool	• Fernando Gonzales • Alex Grippo	• Harvard Business School MBA (Grippo)	N/A	N/A	March 2000	70
Decidir.com	• Esteban Brenman	• Entrepreneur: founded 2 companies by the age 25	• Citicorp Venture Capital • CVC Opportunity • IRR • Cima Investments • Promecap	\$21 m	October 1999	100+

Sources: Endeavor, Industry Standard, Forbes Global

Another key player that has emerged in a supporting role in Argentina's high tech industry is the law firm of Allende and Brea. Analysis of the success of Silicon Valley has shown that law firms provide multiple roles in assisting entrepreneurs, from locating key personnel to financing contacts to providing critical corporate and intellectual property legal services. Just as Silicon Valley lawyers have simultaneously functioned for decades as advisers, financial matchmakers and investors in young companies, Allende and Brea -- lawyers for some 220 plus Argentina dot-com Start-ups -- have gone well beyond their standard legal duties, often assisting companies with business plans, introducing entrepreneurs to potential investors and

helping establish relationships between various business clients who can benefit from one another.

Business networks also play an important role in creating synergies among cluster members by arranging frequent business and professional contact and by bringing together people from different areas such as University engineering departments, venture firms, law firms and operating firms in the area.³⁹ A number of such organizations emerged in Argentina. One that played an important role in advancing the development of the Internet sector is Chamber of Data Bases and Online Services (CABASE). In March of 1998 CABASE, an association of 35 private sector companies, unveiled a local network access point, which eliminated the need for ISP's to channel Internet traffic though the United States and significantly improved user's experience in dealing with the "world wide wait". Other institutions which took root in Argentina's technology sector include the Cámara Argentina de Industrias Electrónicas (CADIE), which works with electronic component and hardware firms, and the Cámara de Empresas de Software y Servicios Informáticos (CESSI), the national software association. These organizations have not always worked in conjunction, sometimes forcing members to take part in multiple conferences and diluting some of their potential influence. However, they have recently taken steps to rectify this and are making a concerted effort to work together. CADIE has recently been discussing the possibility of joining forces with CESSI.

³⁹ Cohen, Stephen and Gary Fields. 1998. "Social Capital and Capital Gains, or Virtual Bowling in Silicon Valley." Berkeley Roundtable on the International Economy. September 1998

Section III – Internet Sector Analysis

In addition to the characteristics of the Argentine dot-com sector already mentioned above, there are a number of other notable features that have marked the rise of the dot-coms. These tendencies can be seen as both a source of early mover advantage and a cause of the dot-com meltdown. And serve as a basis for analyzing the development and current state of the Argentine dot-com sector.

Recycled Business Models

One of the defining features of the first stage of Internet business in both Latin America and in Argentina was the copycat nature of many of the start-ups. In the words of Stace Linsey, director of venture capital firm Explorador “the first generation were opportunists. They were young, Ivy League educated and they saw an opportunity to take US business models and copy them in Latin America.”⁴⁰ Most of the early-mover start-ups in Argentina are modeled on successful dot-coms based in the US. El Sitio is a portal in the nature of Yahoo! and, to a greater extent, StarMedia. MercadoLibre and DeRemate compete to be the Latin American version of eBay while Patagon.com and Latinstocks.com are in the mold of E*trade and Plaza Vertical is similar to US leader VerticalNet.

Not only have business models been copied in Argentina but, all too often, multiple copied models have tried to compete for the same market sector. During a three-month period at the height of the Internet craze, there was at least one vertical portal launched every three days.⁴¹ According to some calculations, at one point there were some 16 vertical portals offering

⁴⁰ Callan, Eoin. 2000. “B2B Internet Ventures” *Financial Times*, Survey - FT-IT. November 1, 2000
⁴¹ EIU viewswire. 2001. “Internet exuberance wanes.” www.viewswire.com. November 14, 2000

personal finance information, 11 in the construction industry and 9 in the agribusiness space.⁴²

Given the mix of a considerably smaller market size in Latin America combined with the presence of multiple competitors, revenues have been splintered and it has been difficult of any one company to achieve the type of critical mass and scale necessary to prosper. With too many players too early in the game a shake-out was inevitable and necessary.

The Meltdown

The meltdown has been swift and forceful. As many as 50 Internet start ups have gone under or severely cut back operation during the first 3 months of 2000.⁴³ And it is estimated that up to half of the approximately 8,000 jobs that were created in the dot-com sector have been lost.⁴⁴ Moreover, the worst may be yet to come. According to Microsoft, McKinsey and Allende and Brea, of the 485 firms documented in their “census”, a mere 13% have secured second round financing. With slow market projections for the foreseeable future and financing becoming harder and harder to secure, the life expectancy of many of these companies is low.

Changing Financial Markets

For all intents and purposes funding has completely dried up following the downturn of the NASDAQ. With the exception of a few investments in companies with cutting edge technology, a report authored by Bain expects “nonexistent” levels of funding for 2001. The study stated that during the first half of 2000 the majority of investment in Latin America was directed to B2C, free ISP services and portals while in the second half of the year most funding

⁴² Microsoft, McKinsey, Allende and Brea – according to EIU viewswire. 2001. “Internet exuberance wanes.” www.viewswire.com. November 14, 2000

⁴⁴ Punto-com.com. 2001 “Argentina: Puntocoms reducen en 50% empleos creados a mediados del 2000.” Apertura.com. 2001. “La Trastienda.” www.apertura.com

went to B2B ventures. Now deal turnarounds have slowed significantly. As Allende and Brea lawyer Daniel Korn told the Economist in November 2000, “Things used to be faster – it would take four weeks to get a deal organized. Now it is taking between three to six months.”⁴⁵

Taking a look at the changing fortunes of seven Argentine companies that made the list of Donaldson, Lufkin and Jenrette’s “Latin America Internet IPO hopefuls”, a list of the 33 most promising Internet companies in Latin America as of May 2000, gives a glimpse of how the environment has changed.

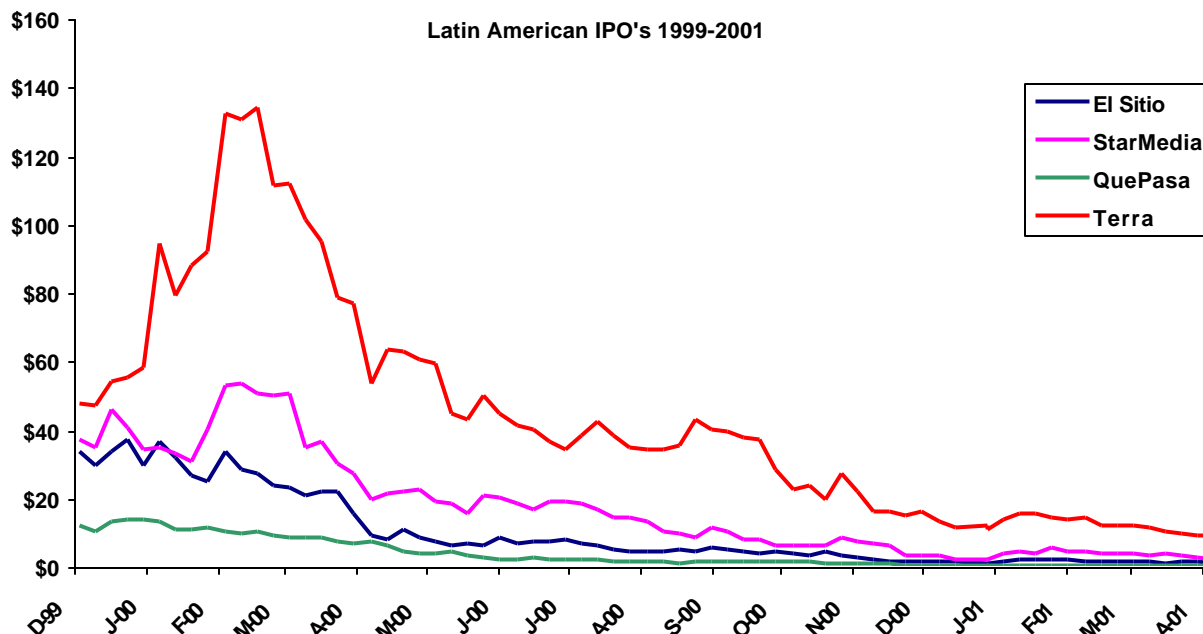
⁴⁵ Lapper, Richard. 2000. “Survey – FT-IT” Financial Times, Survey - FT-IT. November 1, 2000

Donaldson, Lufkin and Jenrette's "Latin America Internet IPO hopefuls"

Company	Category	Early stage Principle Shareholders	Headquarters	IPO	Current Status
Deremate	auction	<ul style="list-style-type: none"> • Citicorp Venture Capital • E Quest Partners • Merrill Lynch Private Equity • ACON Investments • SLI.com 	Buenos Aires to Miami	No	<p><u>Independent</u></p> <ul style="list-style-type: none"> • Sold 30% of company to Terra Networks – 7/2000 • Announces restructuring/cost cutting of 25% 2/2001
Mercadolibre	auction	<ul style="list-style-type: none"> • Chase Capital Partners • The Flatiron Partners • Hicks, Muse, Tate and Furst 	Buenos Aires to Miami back to Buenos Aires	No	<p><u>Independent</u></p> <ul style="list-style-type: none"> • Closed second round of venture capital worth \$46.5 million on 5/2000
Fiera	e-tail	<ul style="list-style-type: none"> • Gigante Organization 	Buenos Aires to Miami	No	<p><u>Independent</u></p> <ul style="list-style-type: none"> • Sold 13.3 percent of company to Technology Internet Fund on 10/2000 • Laid off about 15% of its workforce on 11/2000
LatinStocks	finance	<ul style="list-style-type: none"> • Exxel Group • AOL 	Office Closed	No	<p><u>Severe Cutbacks</u></p> <ul style="list-style-type: none"> • Defaulted on its debt and laid off nearly 80% of its staff
ZonaFinanciera	finance	<ul style="list-style-type: none"> • Plaza Street Capital • Steve Walker and Associates 	Miami	No	<p><u>Independent</u></p> <ul style="list-style-type: none"> • Secured second round financing of \$30 million on 4/2000
Salutia/MedicoUno	health	<ul style="list-style-type: none"> • PCP 	Miami	No	<p><u>Independent</u></p> <ul style="list-style-type: none"> • Closed on a first-round venture capital investment of \$16 million 5/2000
Despegar/Decolar	travel	<ul style="list-style-type: none"> • BA Capital Partners • Hicks, Muse • ML • Newbidge 	Buenos Aires	No	<p><u>Independent</u></p> <ul style="list-style-type: none"> • Secured \$10,5 millon in funding 5/2000
DeAutos	e-tail	<ul style="list-style-type: none"> • South-Net 	Rio de Janeiro	No	<p><u>Merged</u></p> <ul style="list-style-type: none"> • Consolidated with leading Brazilian Auto-sites AutoMovel

By April of 2001 none of the companies had gone public. While six of the eight remained independent, two of the companies (Deremate and Fiera) gave up significant portions of their companies to investors. Four of the companies had the good fortune of closing financing deals in April-May of 2000, just before the downturn in the market and DeAutos merged with Brazilian auto site AutoMovel. LatinStocks, for all intents and purposes, went out of business, defaulting on its debt and laying off 80% of its staff. Two other companies (Deremate and Feira) both announced lay offs at the end of 2000.

Even those companies that have gone public have struggled. A look at what has happened with the earlier success stories El Sitio – as well as other publicly traded Latin American focused sites QuePasa, StarMedia and Terra reveals some of the struggles that have occurred. El Sitio IPOed at \$16 and reached \$33.31 per share after the first day of trading but has since fallen upon hard times. For most of 2001 the share has traded below \$1 and has come dangerously close to being delisted from the Nasdaq for trading below \$1 for 30 consecutive days. Terra and Quepasa have similar stories, starting strongly but trading for a fraction of their IPO value for most of 2001.



Latin American Internet IPO History

Company	IPO Date	Offering Price	First Day Closing Price	52-week range (Apr00 – Apr01)	Closing Price (Apr 10, 2001)
El Sitio	12/09/99	\$16.00	\$33.31	0.44 - 15.13	\$0.84
StarMedia	05/25/99	\$15.00	\$26.00	1.50 – 29.75	\$1.95
QuePasa	06/23/99	\$12.00	\$17.13	0.10 – 5.00	\$0.12
Terra	11/16/99	\$13.41	\$38.50	7.87 – 76.87	\$8.96

Mauro Guillén’s research on the competitive landscape of business in Argentina has pointed to the dominance of large business groups. With the heavy influence of the state, “after 50 years of a love-hate affair with the global economy, Argentina is still a captive of the pattern of erratic populism” that has favored large domestic business groups, or grupos economicos, and multinationals over Small to Medium-size Enterprises (SME’s).⁴⁶ In an inward looking, highly protected business environment that is a legacy of import substitution philosophies of an

46 Guillén, Mauro. 2001. The Limits of Convergence. Princeton University Press

earlier era, these business conglomerates have taken advantage of their privileged position to enter new business areas either through acquisition or by starting their own ventures. While the early success of the start-up dot-coms seemed to buck this trend, the shake out of the Internet sector seems to suggest that this pattern is again being followed.

Vertically integrated groups in Argentina that have stepped up their presence in the dot-com sector include Spain's Telefónica and Argentine publishing giants Agea/Clarín and La Nación.⁴⁷ In addition, having focused on Asia and Europe first, global Internet media players such as Yahoo! and MSN and AOL, are just beginning to develop their Latin American Internet strategies in full force. The Claxon Interactive Group - controlled by Grupo Cisneros and part of the Univision Latin American media giant - has entered the market through the acquisition of over one third of El Sitio and Brazilian powerhouse Universo Online is making strong inroads into the country as well. All of this could further damage local players. According to Media Matrix data from February of 2001, only three of the top twenty-five visited Internet sites in Argentina are domestically owned. Two of them (Ciudad.com.ar and Clarín.com) are controlled by Agea/Clarín. Even El Sitio, the only site among the top twenty-five launched by local entrepreneurs, is now partially owned by Claxon Interactive. Also, a look at Media Metrix data of top ten Internet **properties** (which aggregates multiple domains that fall under one brand or common ownership) in selected countries shows the influence of large global media players both in the Argentine market as well as in other countries. Only one domestic Internet property (Clarín's Ciudad Internet) ranks among Argentina's top ten and all of the countries share at least five of the same global media players among the top ten.

⁴⁷ Guillén, Mauro and Sandra Suarez. 2001. "Developing the Internet: Entrepreneurship and Public Policy in Ireland, Singapore, Argentina and Spain". Telecommunications Policy. Forthcoming

Top Ten Internet Properties – 2/2001

Company	Argentina	Brazil	Spain	US
1	Microsoft Sites	UOL Inc	Microsoft Sites	AOL Network
2	AOL Network	AOL Network	Terra Sites	Microsoft Sites
3	Yahoo Sites	Microsoft Sites	Yahoo Sites	Yahoo Sites
4	Ciudad Internet	StarMedia Network	Eresmas Sites	Terra Lycos Sites
5	Terra Lycos Sites	Yahoo Sites	T-Online Sites	Excite Network
6	About the Human Internet	IG Sites	Lycos Sites	About the Human Internet
7	AltaVista Network	Terra Lycos Sites	AOL Network	Walt Disney Internet Group
8	Napster Application	Webforce Network - HPG	Napster Application	Infospace Impressions
9	StarMedia Network	Globo.Com Sites	Fortunecity Sites	CNET Networks
10	UOL Inc.	ZIPNET Sites	Wanadoo Sites	Amazon
# of Top 10 in Common with Argentina	-----	6	5*	5

Source: Media Metrix

*Terra and Lycos counted as a single entity for Spain

Many market analysts believe that among domestic and global media and telecom giants, Spain's Telefónica and its Internet services and content arm, Terra Lycos, are uniquely positioned to play a dominant role in Argentina's Internet sector.⁴⁸ Beyond any linguistic and cultural advantages over competitors like Yahoo and AOL, the dual entities of Telefónica/Terra Lycos appear to be well situated in multiple internet related sectors – from telecommunications and ISP services to traditional media to technology to banking. Company strategy in Argentina

⁴⁸ Solomon Smith Barney. 2001. "Terra Lycos: Portal to the World." February 13, 2001

has mirrored efforts throughout Latin America, marked by aggressive expansion through acquisition, with a focus on internet access via ISP services and a mix of local and global content to create portals and vertical community sites.

As mentioned earlier, Telefónica Argentina is the larger of the two incumbent telecommunications companies and has enjoyed a 10 year duopoly over the Argentine telecommunications sector in the period following the 1990 partial privatization of the telecommunications sector. Thus it enters the newly deregulated market well situated in the IPS market and with a formidable competitive advantage in terms of access to a large base of existing customers. Telefónica Argentina established a strong early position in the ISP market with the November 1997 launch of Advance Telecommunications. Within two months it had gobbled up competitors Satlik, Compuserve and Overnet to achieve dominant market share. The company is also strategically placed in terms of next-generation forms of connectivity such as DSL and Cable Modems. A joint venture between Telefónica Móviles and Terra Lycos for wireless access - called Terra Mobile - includes a wireless portal that already has over 3 million registered users.

Terra Networks was created in November of 1998, and quickly became an early mover in Argentina by establishing a presence in both traditional and new media content. Early Internet purchases in Argentina included sites GuaichoNet and Donde.com. More recently Bumeran.com, an Argentine human resources site, was acquired as part of a strategy to create vertical communities. Terra Lycos has also been successful at establishing portals in Argentina with three sites among Media Metrix's top 25 domains (Lycos.com, Terra.com.ar and Terra.es). These new media exploits have been blended with strategic old media plays and strong global and local content. To go along with Spanish speaking internet sites Charla.com, Tienda Soft and

Invertia.com, Terra Lycos also has agreements for preferential access to content from the Bertelsmann media empire. Locally Terra Lycos has interests in Argentine media players Telefé, Azul Television and Radio Continental. With the recent merger between Terra and Lycos in 2000, a new, stronger, truly global player has emerged. The new Terra Lycos' strong existing presence and commitment to the Latin America and Argentine market, along with the companies deep pockets (as of February 13, 2001 the company had over \$2.4 billion in cash) mean that it is to be taken seriously.⁴⁹

However, Terra Lycos' position in the Argentina Internet space is by no means guaranteed. Not all synergies between Telefónica and Terra Lycos will be beneficial and some market watchers point to Internet access pricing as a future point of contention. For the last decade Telefónica has made strong returns as a network operator, charging for Internet access and calls on a per minute basis (see section I). This stands to change. President De La Rúa has issued a decree cutting the interconnection rate (the fee newcomers must pay incumbents for use of the network) from 2.35 cents a minute to 1.1 cents. Furthermore, free ISP services, that have been wide spread in Brazil, appear to be making inroads into Argentina with the 2000 arrival of fullzero.com, uyuyuy.com and Alternativagratis.com (backed by George Soros' Quantum Dolphin fund). In the battle for portal traffic Terra Lycos may feel pressured to give access away for free to compete with UOL, StarMedia and others. All of this would come at the expense of Telefónica.

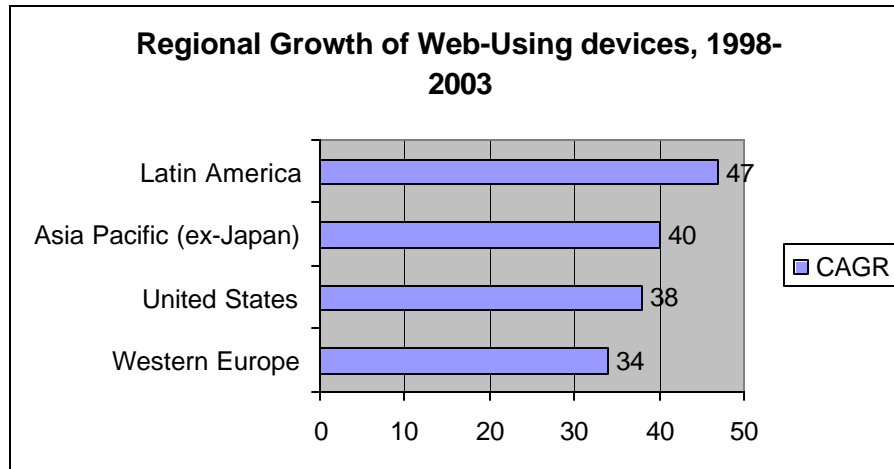
⁴⁹ Solomon Smith Barney. 2001. "Terra Lycos: Portal to the World." February 13, 2001

Section IV – Going Forward

As Argentina looks at the Internet sector going forward, is the proverbial glass half-empty or half-full? How much value, if any, will Argentina's first mover advantage have in the future and to what extent is the country ready to compete in the high tech sector over the long term? To a certain extent Argentina is subject to the fortunes of Latin America's dot-com prospects. At the same time, internally there are many critical issues that the country must tackle.

External

Much of the boom was led by optimism among investors about the long-term prospects of the Internet in Latin America. It is expected to be the fastest growing region in the world. Many early investors were attracted to the Latin American region as a single market – a market with over 500 million people (two thirds of which is Spanish speaking), representing 7% of the world's GDP and with a young population (over 30% of the population under the age of 15) that is predicted to be less resistant to adopting new technology and have more familiarity with the information world of cell phones, PC's, PDA's etc.. Jupiter Communications estimates that the number of online users in Latin America will reach 75 million by 2005.

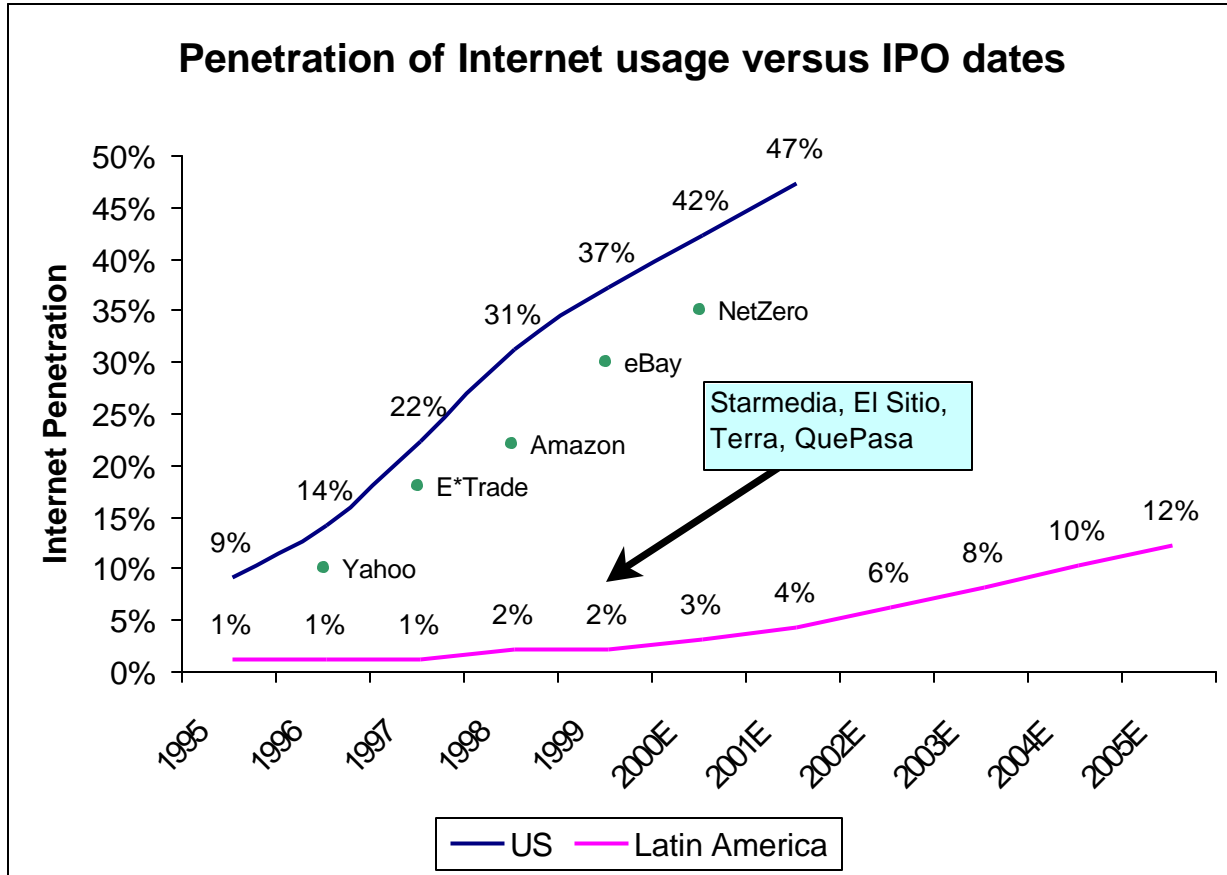


Source: Jupiter Communications

Cart before the Horse?

However this growth is not yet a reality and the market will need time to develop. Jan Boyer who heads Softbank Ventures says “Latin America has been ahead of itself and companies have been funded before the market has been ready for them...everything has been happening too fast too soon.” The US Internet chronology has been inverted in Latin America. In the States, Internet penetration preceded e-business. Over 10% of the US population was already on line when Yahoo! went public in 1996. The penetration rates are even more substantial for later IPO’s such as Amazon (22%), eBay (30%) and NetZero (35%).⁵⁰ In Latin America, on the other hand, only about 2% of the population were on line by the end of 1999.

⁵⁰ Donaldson, Lufkin & Jernette. 2000. “Latin American Internet: Basic Realities of the Next Wave.” May 2000 & Jupiter Communications



Source: *Jupiter Communications*

This may not bode well for the future of entrepreneurs in Argentina’s dot-com sector. One implication of the trajectory of the development of the Latin American market is that in the early stages of the Internet competition have not been focused around start ups with technology leads racing to gain competitive advantage through quiet but rapid growth, but rather, as mentioned earlier, the market has revolved around proven, often recycled concepts.

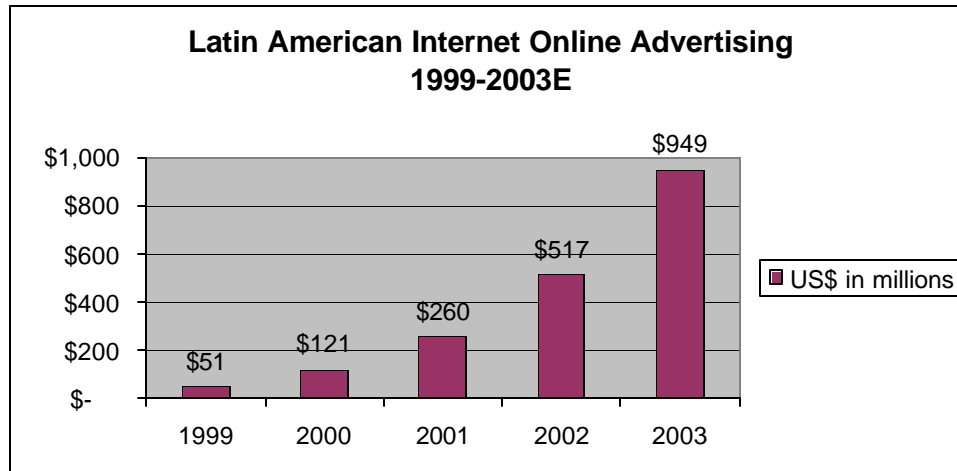
The Copycat nature of the Latin American Internet development changes the competitive landscape. As argued in a recent report put out by Donaldson, Lufkin and Jenrette, “first mover advantage is not the same when the model is copied.” The small size of the Internet market in Latin America makes is “relatively cheap for even latecomers to get visible.” Under these circumstances traditional mass media marketing is required to build brand. There are other

reasons why local dot-coms in Argentina may be at a disadvantage. Many feel that the playing field is not as level in Latin America as it has been for dot-coms in the United States. Because all the players have had a chance to see the US/European models unfold, Latin brick and mortar companies may stand a better chance because they have had time to learn from the mistakes of their peers in the US. Thus, the argument goes, an Amazon won't sneak up on them to the extent that it happened in the US.

Financial Oxygen

All of this leads to the conclusion that "financial oxygen", or the ability to stay alive until the market is more fully developed, will be critical. The critical mass of users and income levels needed for profitable businesses to thrive are farther off. Latin American Internet online advertising -- the revenue source for which many Argentine content sites have built their business model on -- is predicted to grow quickly and reach \$ 949 million, but not until 2003. The same holds true for Internet e-commerce with total transactions growing from close to \$1 billion in 2000 to almost \$8 billion in 2003.⁵¹ Additional obstacles such as fulfillment deficiencies (poor infrastructure, inefficient postal systems) and lack of payment systems (credit card penetration, uneasiness with remote transactions) continue to linger and could severely damper e-commerce growth in the short term.

⁵¹ IDC. 2001. www.idc.com



Source: IDC

Further complicating the development of Internet start-ups in Argentina will be the degree to which Latin America develops into a single market. With the exception of ISP's and general infrastructure plays, most industry analysts now predict that the majority of successful Internet sites will not be pan-American but rather country specific. The belief is that cultural and language differences are significant between countries and that customers will demand local news and entertainment in exchange for customer loyalty. Should this scenario play out, it will mean smaller revenues and more limited audiences – particularly for many of the content driven sites. The recession in Argentina could also hit content driven e-businesses particularly hard. As conventional advertisers cut back the amount of advertising spent on the Internet, ad-based revenue on the web is estimated to be as low as \$7-8 mill this year.⁵² Latin America media content is very concentrated and deep-pocketed incumbents such as Brazil's Globo, Mexico's Televisa and Argentina's Clarín appear much better positioned to survive until the market becomes more lucrative.

⁵² Ebusinessforum.com. 2001. "Argentina: New dot-coms Toughen the Competition"

Internal Development

While the regional and global business environment plays a large role in the immediate future of the dot-com sector in Argentina, in the long run, developing the internal capabilities to compete will be even more critical. While Argentina has been given a “head start”, in many categories the country seems to be moving in the wrong direction.

Human Capital

Education is still the key to a more prosperous future. While Argentina appears strong compared to most other Latin American countries, there are clearly troubling warning signs that the country is failing to create a future generation able to compete in the global information society of tomorrow.

Primary and secondary education is not what it used to be and has been slipping fast – particularly when compared with developed nations. This is in part due to a lack of funding. Teachers salaries, once above the average of white collar professionals in the country, have dropped astonishingly low. The average salary for an Argentine schoolteacher is \$6165 annually while the OECD average is 3 times higher at \$18,486. Educational investment per student is also uncompetitive. Educational spending as a percentage of GDP in Argentina is 3.1% vs. the 5.3% OECD average. Where most developed countries spend \$115,200 per year per pupil on education the Argentine state spends only \$12,966.⁵³

The educational results reflect this. Grade repetition rates are high. According to a study by Sistema de Información, Monitoreo y Evaluación de Programas Sociales, 920,000 youth between 15 and 24 neither work nor go to school. Rankings in Math and Science are low - Argentina ranks 48 out of 59 nations surveyed according to the World Competitiveness Report -

⁵³ La Nación, September 28, 1998, p.12 referring to a report issued by UNESCO

and only 11% of secondary school graduates know the Pythagorean theorem and just 10% of can correctly calculate the area of a “sembrada?”⁵⁴

Education at tertiary level is also problematic. While a high percentage of secondary students enter college (65%), 25-40% have dropped out after on year and only 19% of this group will have a diploma at the end of 5 years. Enrollment has soared but increases in funding for education have not matched this growth. Facilities are sub par and professors are poorly paid (\$320 a month in Buenos Aires) and often part-time. Bureaucracy is overbearing with a full 17% of education spending going to administration and never reaching the classroom.⁵⁵ Many of Argentina’s 86 Universities (49 of which are private) have been criticized for producing mediocre students who lack the types of marketable skills needed to compete in the global economy.

Improvements in education alone will not be enough to ensure a smooth transition to a knowledge economy. Argentina must create an environment that increases interest and skills in technology by raising public awareness and promoting technological innovation. To date Argentina has not been aggressive enough in promoting a culture of creativity and information sharing within the society. Data on royalty fees can be used to reveal activity in international technology transfer and trade in technical know how. Argentina’s 1998 figures of \$8 million in receipts and \$422 million in payments is not poor among Latin American countries. It is, nonetheless, a heavy net importer of technology sold as intellectual property and is a far cry from wealthier net exporting nations such as the United States, Sweden or the United Kingdom.⁵⁶ Argentina ranks 56 out of 59 nations in the World Competitiveness Report in terms of

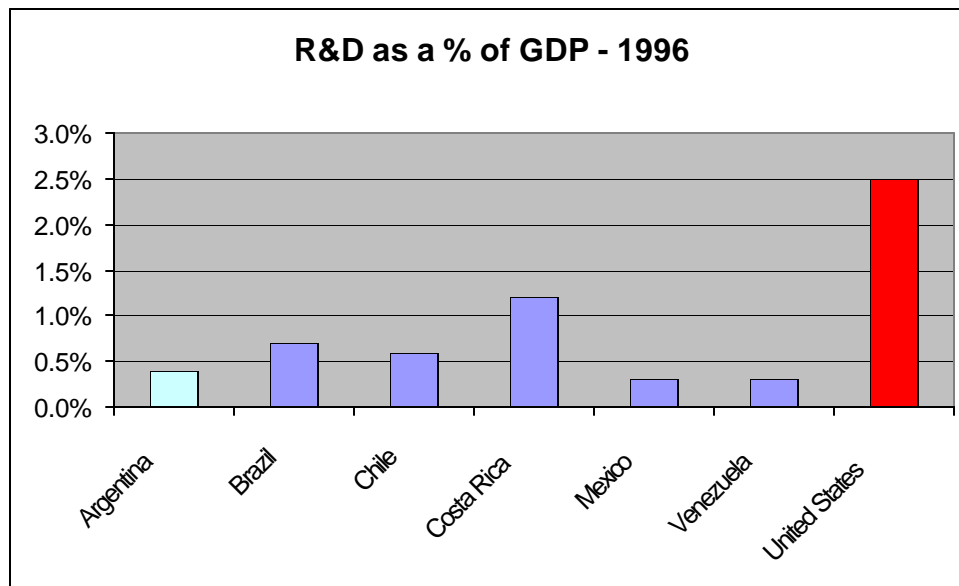
⁵⁴ La Nación Line. 2001. “Crisis del Saber.” Grandes Temas Pendientes de la Argentina: Education. www.lanacion.com.ar/espec/grandes_temas/education/nota1.htm

⁵⁵ Economist.com. 2001. “More Students than Cash.” May 4, 2000

⁵⁶ International Bank for Reconstruction and Development. 2000. “2000 World Development Indicators

technology development. On certain fronts Argentina appears to be moving in the wrong direction. A recent National Science Foundation report on R&D spending in Latin America showed that while countries such as Brazil, Mexico and Costa Rica have significantly increased R&D spending Argentina has slipped backwards.

Country	R&D Expenditure in 1990 (\$ Billions)	R&D Expenditure in 1996 (\$ Billions)	% change 90-96	R&D as a % of GDP 1996
Argentina	\$2.2	\$1.4	- 36%	0.4%
Brazil	\$3.7	\$7.1	+ 91%	0.7%
Chile	\$1.1	\$1.0	- 10%	0.6%
Costa Rica	\$0.1	\$0.2	+ 100%	1.2%
Mexico	\$1.1	\$2.1	+ 90%	0.3%
Venezuela	\$0.5	\$0.5	0%	0.3%



Source: Red Iberoamericana de Indicadores de Ciencia y Tecnologia (RICYT)

Even in categories where Argentina has been strong, future success is far from certain. While the country ranked favorably in terms of supply of knowledge workers (see Section II) a recent study by IDC nevertheless predicts IT skills shortages in the country. Not only developing but keeping the most talented IT professionals is more and more critical. While a recent National Science Foundation study confirmed that Argentina is taking positive structural steps to attract students and young scientists, nagging economic problems are a potential stumbling block. Brain drain is serious issue and the young and most talented are leaving Argentina in record numbers.

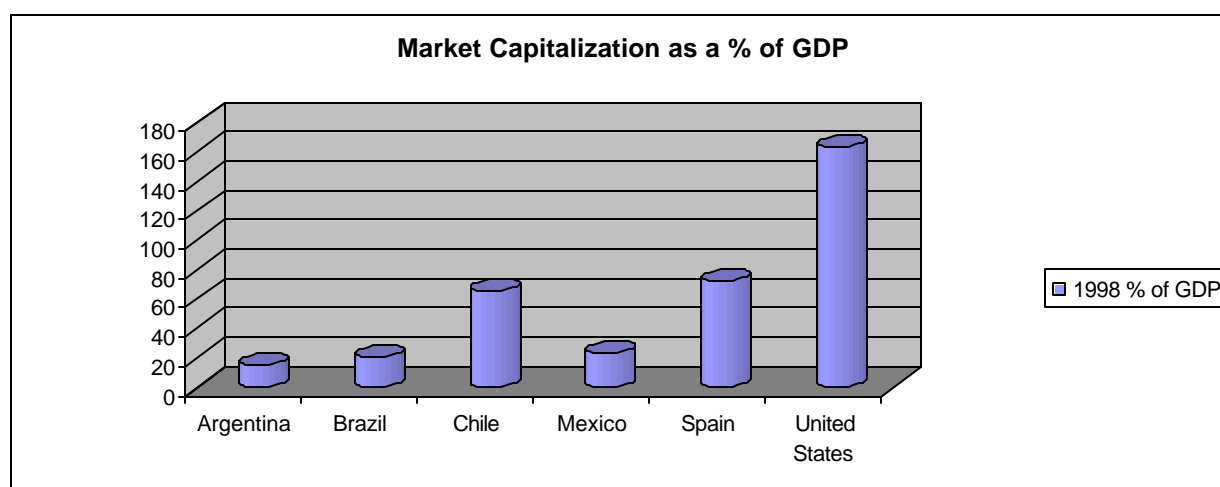
E-Business Environment

Improvements in the conditions for entrepreneurship are also needed. A major obstacle facing Internet entrepreneurs will be financing. The recent arrival of venture capital funding has overshadowed problems with bank financing. However, with VC funding slowing to a virtual standstill things could be problematic and access to capital could be a serious constraint for Internet start-ups in Argentina. According to the Metricnet Index of new economy competitiveness, in the category of “Dynamism and Economic Competitiveness” – that puts heavy weight on the availability of capital – Argentina is ranked a lowly 40th. While the Argentine banking sector has significantly increased its competitiveness in the last five years it continues to be highly inefficient. A more competitive environment has led to consolidation, with the number of banks shrinking from over 200 to close to 120. However, nine banks still hold over two-thirds of all bank deposits. Bank loans range from 12% interest rates for big company to 20-30% for a small one.⁵⁷ A recent analysis by the Economist looking at the spread between commercial bank deposits and lending rates suggests that the system is highly

⁵⁷ Economist.com. 2001. “Where the Dinosaurs Roam”

inefficient, with banks significantly increasing the overall cost of investments and therefore hindering economic growth.⁵⁸ Country risk also plays a role in creating adverse business conditions. The high cost of capital puts Argentina at a significant disadvantage. A recent study in the McKinsey Quarterly found that due to high country risk – either real or perceived – up to 20% of the value of capital invested was destroyed, with capital investment returns failing to match what might have obtained elsewhere given similar levels of risk.

The Argentine stock market, the Bolsa de Comercio, is ineffective in terms of raising capital. A look at stock market indicators as a measure of Argentina's financial strength in relation to more developed markets reveals inadequacies. Argentina's market capitalization as a percentage of GDP of 15.2% in 1998 ranked well behind other nations with whom the country may compete with for control of Latin American/Spanish speaking Internet supremacy such as Brazil, Chile, Mexico, Spain and the United States.⁵⁹ Also in terms of improved capital allocation and liquidity, as measured by turnover ratio or shares trades as a percentage of capitalization, Argentina again stacks up poorly.



Source: 2000 World Development Indicators

⁵⁸ Economist – “Where Dinosaurs Roam”

⁵⁹ World Development Indicators - 2000

A consequence has been that most Argentine Internet companies with any IPO aspirations at all have looked to the US and the NASDAQ. Weakness of the Argentine market has also had negative implications for creating conditions needed to attract foreign investors and venture capital. They see the lack of exit avenues via an IPO as a major deterrent. Meanwhile other countries, such as Spain with the launch of the Nuevo Mercado, have attempted to create the necessary conditions to encourage technology companies to go public at home. Brazil plans the launch of a similar "Novo Mercado" in April, 2001. While current market conditions may cause these initiatives to struggle in the immediate future, should the environment change they will have a significant advantage for Argentina.

The rigid labor laws that restrict the Argentine economy in other sectors are less of a problem in the high tech industry where strong labor unions are not as entrenched. Furthermore, with a large black market for workers and temporary contract works easy to find, the problem is not as restrictive as many perceive it to be. However, very real problems of international competitiveness issues stem from Argentina's pegged currency policy. With the peso tied to an internationally strong dollar, Argentina is stuck in the difficult position of having to greatly improve productivity and add value in order to compete with countries with lower production costs. Buenos Aires, in particular, is a very expensive city. According to the William M Mercer Company's Cost of Living Index, Buenos Aires - where almost all of Argentina's dot-com activity is centered - is a more expensive city to live in than New York. Therefore, Argentine dot-com companies have not been able to leverage the low cost/high productivity proposition to the same extent that other high tech sectors in emerging markets such as Israel and India have. In fact, for reasons ranging from cost and geographic centrality to network externalities and

social capital, many Argentine companies (Mercadolibre, DeRemate!) have left Buenos Aires and relocated to Miami's "Silicon Barrio".

Government Initiative

Astute government involvement in the development of the Internet sector will also be needed. High on the agenda must be the developing a new "Internet generation". Only about 10% of Argentina's 11 and a half million households own a personal computer. At a price of roughly \$1000, a PC is still prohibitively high for most families. To overcome this President de La Rúa has unveiled a \$1 billion program to subsidize loans for personal computers. Another campaign launched by the Government aimed at increasing Internet connectivity is Educ.ar. The \$250 million program, run by President De La Rúa's son, will attempt to wire all 37,000 of Argentina's primary and secondary schools and will also work with the Ministry of Education to provide educational content and training material. The government has also proposed to provide free email addresses to all citizens. These developments, along with the arrival of free ISP services to Argentina in 2000, should help increase levels of Internet connectivity.

Government policy decisions in e-commerce and telecommunications policy will be critical. Past government initiatives to expand access, guarantee secure transactions and protect intellectual property have met with limited success but need to be continued. The deregulation of the telecommunications sector that took place at the end of 2000 has already shown positive results and should continue to improve services, but the government must cast a watchful eye to ensure the development of an increasingly competitive marketplace. Legislation that brings intellectual property rights up to global standards is pending and regulations for e-signatures, which will serve to expand e-commerce transactions, are already in place. Argentina has wisely

chosen not to meddle with online taxation issues for the moment, preferring to hold off until the sector is better developed.

Finally, Argentina must attempt to restore stability and institutional credibility. The circus surrounding Argentina's recent macroeconomic instability has certainly not helped. At one point in March of 2000 Argentina had 3 different economic ministers in a month. Mass resignations have been the hallmark of the De La Rue administration and, with crumbling support in an already weak coalition, some have suggested that the president has effectively "outsourced" government responsibilities by bringing in new economic minister Domingo Cavallo. Other problems facing the government stem from the Argentine's deep-seated distrust and disillusionment with poorly developed democratic institutions in their country. One key issue - a legacy left over from the Menem administration - is corruption. At the time of the most recent election over 70% of the Argentine population viewed corruption as a major problem. The rest of the world shares this perception. According to the 1999 Transparency International Corruption Perceptions Index, there were at least 71 countries in the world that were less corrupt than Argentina. Echoing this, in a different AT Kearny ranking Argentina fell from 19 to 24 (1999-2000) in the category of "confiabilidad para invertir."

Conclusion

As outlined in the first section of the paper, Argentina was a logical location for Internet entrepreneurship to blossom in Latin America based upon clear advantages over other countries in the region in certain fundamental areas. Argentina's comparative wealth, superior primary and secondary education and large pool of technically skilled "knowledge workers" laid the foundation for the country's success. Yet in spite of a more fully developed communications

infrastructure that included higher PC and phone line penetration rates, Internet connectivity was slow to take off and didn't increase until the government took steps to reduce access costs. Interestingly, Argentine dot-com businesses sprang up in the absence of ideal conditions for entrepreneurship and investment. Internet businesses were able to navigate their way clear of an unstable and unpredictable institutional environment plagued by corruption, unfair competition policy and a poor justice system.

As the second section pointed out, in addition to the "usual suspects" such as wealth and connectivity, there were a number of equally powerful influences at work that help to explain the Argentine e-business boom. A strong case can be made that Argentina's turbulent recent history influenced the dot-com gold rush by providing a window of opportunity for a pessimistic and disillusioned populace to tap into their pent up entrepreneurialism. Timing of the market was also key. A well developed print media and entertainment content sector helped position Argentina at the right place at the right time and was one of the factors that allowed the majority of the companies in the sector to launch while the markets were still receptive to Internet ventures.

The arrival of venture capital in Argentina at the end of the 1990's provided a critical source of funding that had been missing due to the prohibitively high cost of capital available through domestic banks. Attracted to the region by the return of democratic stability and the high growth potential of Latin American Internet use, and inspired by the successful IPO of Latino portal StarMedia, venture capitalists poured money into Argentina and served as a catalyst to the Internet boom. They were not alone. A number of other supporting businesses and organizations grew up around the Internet sector and served to reinforce the sectors development and help build networks and create synergies among different actors.

A closer analysis of the Internet sector, performed in section three, reveals certain structural features of the Argentine dot-com sector that served as an advantage early on but that may prove the basis of failure over the long term. By taking successful Internet business models from the United States and recycling them toward a Latin American audience, many Argentine entrepreneurs were able to quickly seize the opportunity and position themselves as market leaders. However, a lack of imagination led to overcrowding and the splintering of an already small and relatively undeveloped audience. A market shakeout was inevitable.

The meltdown of the Internet sector has hit Argentina hard. Many start-ups have already gone under and at least half of the jobs originally created by the sector have been eliminated. With very few companies securing second round financing many more firms may go under. Venture capital has been, for all intents and purposes, completely shut off and companies that just a year ago had solid IPO prospects are now being acquired or are fighting for survival. Companies that were able to make it public before the downturn have seen their stock battered. The structure of the industry is becoming dominated more and more by large conglomerates and global media players.

As discussed in section four, distinctive features of the Latin American market may mean that Argentina's dot-com head start will be short lived and of little advantage in the future. There are characteristics of the market that have created a less than level playing field for local dot-coms in Latin America and may favor deep-pocketed bricks and mortar incumbents. The chronology of the Internet in Latin America has been inverted in comparison with the United States with companies coming to market ahead of high Internet penetration rates. While Internet commerce in Latin America may one day grow significantly, the relatively small and splintered current market may take time to develop. The time lag between the US and Latin American

markets has allowed opportunistic entrepreneurs to recycle successful US business models but has also given incumbent brick and mortar companies a chance to learn from the mistakes of their US and European peers.

In the long run, Argentina's ability to develop the internal capabilities to compete in the knowledge-based economy will be even more critical. Argentina's primary and secondary education systems, while still strong compared to other Latin American countries, are far behind most developed countries and have been slipping in recent years. Tertiary education also must improve and more financial resources and a greater commitment to developing students with strong technical skills is needed. Initial steps have been taken on these fronts but much more is needed.

The government also needs to take steps to create a business environment where entrepreneurship can thrive. Access to capital remains a central obstacle to entrepreneurship. An inefficient commercial banking sector charges prohibitively high lending rates, significantly increasing the overall cost of investments and hindering economic growth. Local stock markets have proved ineffective at raising capital and deter venture capital investors - who fear the lack of an "exit strategy". The pegged currency has also hurt the competitiveness of Argentine entrepreneurs who don't benefit from lower costs relative to other international competitors. Most of all Argentina needs to develop a stable set of policies and institutions that create conditions where e-business can flourish and where credibility is restored and public lack of confidence and doubts about corruption are tackled head-on.

Argentina finds itself at a crossroads trying, on the one hand, to compete with the developed countries of the world while, at the same time, trying not to slip backward as the country struggles with issues traditionally confronting third world countries such as debt default

and widening income inequality. The Internet, and the dot-com boom and bust, are very much a part of this larger picture. The short-term fall out of Argentina's early net entrepreneurs has been intense and may only get harsher in the coming year. Yet, while the first mover advantage may have disappeared, the truly critical issues revolve around the country's long-term vision.

Argentina must make the transition to a knowledge-based economy found in the world's richer nations. As a recent McConnell Report on international Internet development stated, "some countries will make technology a driver for a new national economy, leaping from an agrarian or industrial base into the knowledge economy.....others will fail to take the necessary steps and will be left behind in the race for cyber markets." The same drivers required for success in the information economy play a critical role in improving productivity in the economy as a whole. While the first round of the dot-com boom may be coming to a close the real race is just beginning.

Reference:

- Apertura.com. 2001. "(Tapa) Made in Argentina." www.apertura.com
- Apertura.com. 2001. "La Trastienda." www.apertura.com
- Atkinson, Karie. 2001. "VCs are landing hot investments in Latin America." Red Herring, June 15, 2000
- Bidart, Silvia. 2001. "Lessons for Emerging Markets." Working paper for OECD Business-Government Forum on Electronic Commerce
- Callan, Eoin. 2000. "B2B Internet Ventures" Financial Times, Survey - FT-IT. November 1, 2000
- Casaburi, Gabriel and Guillermo Mondino. 2000. ".com.ar: La Revolucion de las Tecnologias de la Informatica y la Comunicacion en Argentina." March 2000
- Catan, Thomas. 2000. "Internet Euphoria in Argentina" Financial Times, Survey - FT-IT. November 1, 2000
- Chaumeil, Thierry. 1999. "The Internet in Argentina: Study and Analysis of Government Policy." www.isoc.org/oti/articles
- Cohen, Stephen and Gary Fields. 1998. "Social Capital and Capital Gains, or Virtual Bowling in Silicon Valley." Berkeley Roundtable on the International Economy. September 1998
- Credit Suisse First Boston. 2000. "Latin America Internet Industry Update." February 2000
- D'Souze, Juliet and William Megginson. 1999. "The Financial Operating Performance of Privatized Firms during the 1990's." Journal of Finance. Vol 54

- Dalmasso, Juan Pablo. 2001. "Comparacion Internacional de los negocios electronicos." www.merado.com.ar
- Dalmasso, Juan Pablo. 2001. "El Mito de Silicon Valley." www.merado.com.ar
- Dalmasso, Juan Pablo. 2001. "La Argentina, productora de ti?: El posicionamiento local segun el Global New Economy Index." www.merado.com.ar
- Donaldson, Lufkin & Jernette. 2000. "Latin American Internet: Basic Realities of the Next Wave." May 2000
- Ebusinessforum.com. 2001. "E-business readiness rankings: Argentina at a Glance."
- Ebusinessforum.com. 2001. "Doing e-business in Argentina"
- Ebusinessforum.com. 2001. "Argentina: New dot-coms Toughen the Competition"
- Economist.com. 2001. "It's an Unfair World"
www.economist.com/surveys/displayStory.cfm?Story_id=332751
- Economist.com. 2001. "More Students than Cash"
www.economist.com/surveys/displayStory.cfm?Story_id=332740
- Economist.com. 2001. "Newbusiness@argentinapuntocom"
www.economist.com/surveys/displayStory.cfm?Story_id=305696
- Economist.com. 2001. "Where the Dinosaurs Roam"
www.economist.com/surveys/displayStory.cfm?Story_id=348251
- Eilemberg, Moises. 2001. "el fin de la neuva economia.com." Punto-com. November 30, 2000. www.punto-com.com
- EIU viewswire. 2001. "E-business sector under strain." www.viewswire.com. January 29, 2001

- EIU viewswire. 2001. "Internet exuberance wanes." www.viewswire.com. November 14, 2000
- eMarketer. 2001. www.emarketer.com
- Endeavor. 2001. www.endearvor.com
- Financial Times. 2000. "Argentina 2000: Country Brief."
- Gaiasur – CACE. 1999. "E-commerce en Argentina Hoy: Inform 1999."
- Glanz, James. 2001. "Trolling for Brains in International Waters." [New York Times](http://www.nytimes.com). April 1, 2001
- Goni, Uki. 2001 "Los retos de Educ.ar." [Punto-com](http://www.punto-com.com). February 2, 2001. www.punto-com.com
- Guillén, Mauro and Sandra Suarez. 2001. "Developing the Internet: Entrepreneurship and Public Policy in Ireland, Singapore, Argentina and Spain". [Telecommunications Policy](#). Forthcoming
- Guillén, Mauro. 2001. [The Limits of Convergence](#). Princeton University Press
- Hargittai, Ester. 1999. "Weaving the Web: Explaining the differences in Internet connectivity among OECD countries." [Telecommunications Policy](#) Vol 23 November-December 1999
- Helft, Daniel. 2001. "Net Ventures Grow Cold in Latin America." [The Industry Standard](#). January 31, 2001
- Helft, Daniel. 1999. "No Need to Cry for VC's, Argentina." [The Industry Standard](#). December 13, 1999
- Helft, Daniel. 2000. "Spreading the Wealth" [The Industry Standard](#). December 11, 2000
- Helft, Daniel. 2000. "PC's for the People." [The Industry Standard](#). May 15, 2000

- IMD. 2000. "The World Competitiveness Yearbook 2000." CD-rom
- IDC. 2001. www.idc.com
- International Bank for Reconstruction and Development. 2000. "2000 World Development Indicators"
- International Telecommunications Union. 2000. "Americas Telecommunications Indicators 2000. ITU Telecommunications Indicators Update." April, May, June 2000
- International Telecommunications Union. 2001. "Telecommunications Indicators." www.itu.int
- IPO.com. www.ipo.com
- Jupiter Communications. 2000. "Understanding the Promise of the Mobile Internet in Latin America" November 2000
- Jupiter Communications. 2001. "An Untapped Market: Argentina's Broadband market Awaits Provider Initiatives" January 2001
- Jupiter Communications. 2001. "Free Access over TV Shows Promise, Despite Content Conundrum"
- Kraus, Clifford. 2000. "With No Hope for Economy, many Argentines are Leaving." [New York Times](http://www.nytimes.com). November 24, 2000
- La Nación Line. 2001. "Chile Quiere Liderar la Revolucion Digital." www.lanacion.com.ar/00/12/08/c07.htm
- La Nación Line. 2001. "Crisis del Saber." Grandes Temas Pendientes de la Argentina: Education. www.lanacion.com.ar/espec/grandes_temas/education/nota1.htm
- La Nación Line. 2001. "Un Virtual destierro del sistema." Grandes Temas Pendientes de la Argentina: Pobreza. www.lanacion.com.ar/espec/grandes_temas/pobreza/nota1.htm

- Lapper, Richard. 2000. "Survey – FT-IT" Financial Times, Survey - FT-IT. November 1, 2000
- Lehman Brothers. 2000. "Latin America Online: Sizing the Internet in Latin America." July 2000
- McConnell International. 2000. "Risk E-Business: Seizing the Opportunity of Global E-Readiness. August 2000
- McKinsey Quarterly. 2000. "Value in Argentina." Http.mckinseyquarterly.com
- McKnight, Lee and Paul Vaaler and Raul Katz. 2001. Creative Destruction: Business Survival in the Global Internet Economy. MIT Press
- Media Metrix. 2001 "The Fifty". www.mediamatrix.com/data/thetop.jsp
- Mercado Digital. 2001. "America Latina Tendra 75 Millones de Usuarios en 2005." www.merado.com.ar
- Merrill Lynch. 1999. "Internet @ Latam: The Current State and Prospects of the Internet in Latin America." August 1999
- Metricnet.com. 2000. "The Global New E-Economy Index: A Cyber-Atlas, 2nd Edition, 2000."
- Morgan Stanley Dean Witter. 2000. "The Latin America Internet Report: In Leaps and Bounds." February 2000
- National Science Foundation. 2000. "Latin America: R&D Spending Jumps in Brazil, Mexico and Costa Rica."
- Nua Internet Surveys. 2001. "Latin America Poised for IT Skills Shortage." July 15, 2000. www.nua.ie
- OECD. 2000. "Science, Technology and Industry Outlook 2000."

- OECD. 2000. "Education at a Glance: OECD indicators, 2000 edition."
- Oxley, Joan and Bernard Yeung. 2000. "E-commerce Readiness: Institutional Environment and International Competition." Journal of International Business Studies
- Petrazzini, Ben and Agustina Guerrero. 2000. "Promoting Internet Development: The Case of Argentina." Telecommunications Policy Vol 24 pp. 89-112
- Prince & Cooke. 2000. "Internet y Comercio electronico en Argentina." August 2000
- Punto-com.com. 2001 "Argentina: Puntocoms reducen en 50% empleos creados a mediados del 2000."
- Punto-com.com. 2001 "Otra Oportunidad?."
- Punto-com.com. 2001 "Usuarios Argentios son los que mas pagan en Latam."
- Richardson, Vanessa. 2000. "Funding the Vida Loca." The Red Herring. November 18, 2000
- Saxenian. Annalee. 1994 "Lessons from Silicon Valley." Technology Review. July 1994. pp.42-52
- Schmitz, Hubert. 2000. "Does Local Co-operation Matter? Evidence from Industrial Clusters in South Asia and Latin America." Oxford Development Studies vol. 28, pp323-336
- Solomon Smith Barney. 2001. "Terra Lycos: Portal to the World." February 13, 2001
- Transparency International. 2000. "1999 Transparency International Corruption Perceptions Index." www.transparency.de
- UNESCO/OECD World Indicators Programme. 2000. "Investing in Education: Analysis of the 1999 World Education Indicators"

- Werner, H.M. 2001. "Latin America Mulls Over Lack of Exit Strategies." Venture Capital Journal. May 1, 2000
- World Economic Forum. 2000. "The Global Competitiveness Report 2000." Oxford University Press
- World Information Technology and Services Alliance. 2000. "International Survey of E-commerce: 2000."