Creative Entrepreneurship at iconstruye: A Pan Andean e-Procurement Market Maker

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J uan Correa looked out of his nineteenth floor window and noted the growing number of construction cranes visible against the backdrop of the Andes. This was a good sign and predicted that the construction business would be good during spring, the main building season in the Southern Hemisphere. Correa, CEO and a founder of iconstruye, a provider of business-to-business (B2B) procurement software for the construction industry, knew that he and his team were going to be undertaking a project where creative solutions would be required each step of the way. He knew that the models used in North America to provide (B2B) services over the Internet remained unproven, that access to Silicon Valley-style venture capital was nonexistent in Chile, and that they were proposing to develop a B2B e-marketplace[1] procurement system for the construction industry, a traditionally conservative group of businesses. Correa also wondered what would happen when iconstruye became, as he hoped, the dominant B2B procurement system in the Chilean construction industry. What would the course of action be then? How would iconstruye continue to grow? Would he and the team decide that Chile, with its relatively small markets, be sufficient? Alternatively, should the company decide to strike out in other directions, building upon its success and knowledge, perhaps entering other South American markets or even converting the system into a multilingual system and taking a position in the emerging Spanish language-based markets of the United States? That decision was some ways off; first they had to get the business up and running and cash flow positive.

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1. *Definition: e-marketplace*: a network service shared by multiple individuals and enterprises where information about products and services are shared electronically among enterprises and where those products and services may be purchased without the aid of voice or paper-based exchanges. e-marketplaces are the translation of actual commercial and consumer marketplaces (e.g., shopping malls) to the virtual environment. Examples of e-marketplaces include the Internet, membership-based online services, bulletin boards, interconnected private networks and value-added third-party networks. From: Furlonger, D. & Landry S. (2001, March). *B2B marketplaces: A definition of terms* (Gartner Consulting Research Note M-12-7920). Stamford, CT: Gartner, Inc.

Table 1

Selected B2B Marketplaces in Latin America

B2B entity	Industry	Country of origin
b2becuador.net	Agriculture	Ecuador
Ddex.com	Directory of Venezuelan Exporters	Venezuela
Agrositio.com	Agriculture	Argentina
Mercantil.com	B2B Community	Mexico
Mercador.com	Retail Food	Brazil
Entel Chile (www.123.cl)	Telecommunications	Chile
eficentrum.com	MRO	Mexico
Comercio-Electronico (www.e-global.es)	Multiple	Peru
Senegocia.com	Multiple	Chile

Note: Websites valid as of April 17, 2006.
B2B, business-to-business; MRO, Maintenance Repair and Operations.

Latin American e-Commerce

In Latin America, business to consumer (B2C) e-commerce had been significantly slower to develop than in the North American market; the B2B market had undergone similar delays in its development and lagged behind its neighbors to the North by several years. The time lag was beneficial for those building the Latin B2B web-based marketplaces, as they could learn from the mistakes of failed predecessors and devise new models better tailored to an individual business environment. Forrester Research in 2000 projected that the B2B transaction rate in Latin America would reach $63.8 billion by 2005,[2] and that the number of companies developing B2B systems would continue to grow, employing a variety of models. These B2B marketplaces included B2Bequador, ddex.com, and Mercantil.com, all who provided simple websites that listed business opportunities, detailed product catalogues, and contact information. A second group of B2B companies such as ProcuraDigital, Exiros, and Eficentrum, offered full e-procurement systems, systems integration, and auction services for clients. Finally, a third category of B2B exchanges also evolved in Latin American marketplace. The companies focused upon only one industry (sometimes referred to as a vertical marketplace), in which companies such as Mercardo Electronico and Chematch created B2B marketplaces in electronics and chemicals (see Table 1 for examples of South American B2B companies).

Chile: A Primer

Chile: Demographics[3]

Stretching along 6,171 km of Pacific coastline and bounded by the might of the Andes, Chile is only twice the size of Montana. Its population of approximately 16 million

2. Macaluso, N. (2000, October 20). Latin America poised for B2B boom. *E-Commerce Times*. Available at http://www.ecommercetimes.com/perl/story/4602.html, accessed 20 October 2000.
3. Unless otherwise noted, all data in the paragraph come from: http://www.cia.gov/cia/publications/factbook/geos/ci.html, accessed 13 April 2006.

(July 2004 est.) has a literacy rate of 96.2% (2003 est.). Chile has one of the highest standards of living in the region, with about 85% of the country's population living in urban centers, 37% (approximately 6 million people) of those living in the Santiago Metropolitan Region (2002).[4] The country has a relatively low unemployment of 8.5% (2003 est.), a low inflation rate of 2.8% (2003 est.), a stable currency (Chilean peso), and a stable democratic government. Chile also has a larger percentage of the population employed in the service sector than in its industrial and agricultural sectors combined.

Chile: Telecommunications and Infrastructure

During and subsequent to the Pinochet era, the drive in Chile to create and to improve its traditional and technological infrastructure had resulted in close to 80,000 km of roads and 6,500 km of rail network.[5] Since that time, heavy investment in telecommunications has resulted in 3.5 million fixed lines, a penetration rate of 23% (2002), and 11 million mobile telephone subscribers, a penetration rate of 47% (December 2005).[6] This modern and robust telecommunications infrastructure allowed Chile to develop the second highest level of Internet penetration in South America with 4 million Internet users (September 2004), a penetration rate of 25.8%. (Uruguay achieved a 34.7% penetration rate with 1,190,120 users (December 2003).[7,8] In 2003, the Ministerio de Economia estimated that Internet access was available in 500,000 Chilean homes, 100,000 businesses (69% of companies), 4,700 schools, 226 higher education institutions, and 1,300 public Internet centers, 320 municipal government offices, and at all central government agencies.[9] The use of broadband as a mechanism to connect to the Internet had increased during 2003 by 68%,[10] reaching more than 330,000 connections. A recent study by Cisco estimated that the number of broadband connections in Chile would continue to grow and eventually surpass the number of dial-up connections, which in 2003 stood at 560,000.[11] A survey of 104 economies conducted by The World Economic Forum[12] in 2003–2004 examined each country's preparedness "to participate in, and benefit from, developments in information and communication technologies." Of the 104 economies studied, Chile ranked 32nd. This ranking positioned Chile as the most technologically advanced country in Latin America. Santiago, its capital, ranked as Latin America's top city in terms of telecommunications infrastructure. Santiago also ranked ahead of Miami, Florida, which was also included in the study.[13]

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4. Available at http://worldatlas.com/webimage/countrys/samerica/cl.htm, 13 April 2006.

5. Central Intelligence Agency. (2006). *World Factbook*. Available at http://www.cia.gov/cia/publications/factbook/geos/ci.html, 13 April 2006.

6. Chile telecoms players eye Movistar frequency-source. (n.d.) Available at http://reuters.com, 4 April 2006.

7. Intervencion Vice-Ministero de Economia de Chile Alvaro Diaz. (n.d.). Available at http://www.itu.int/wsis/geneva/coverage/statements/chile/cl-es.html, accessed 13 April 2006.

8. Usage and population statistics. (n.d.). Available at http://www.internetworldstats.com/south.htm, accessed 13 April 2006.

9. Digital agenda: A government priority. (n.d.). http://www.foreigninvestment.cl/index/plantilla4.asp?id_seccion=33&id_subsecciones2=8, accessed 13 April 2006.

10. Chile Foreign Investment Committee. (2006). Chile's broadband connections top 300,000. *El Mercurio, El Diario*. Available at http://strategis.ic.gc.ca/epic/internet/inimr-ri.nsf/en/gr119795e.html, accessed 10 March 2008.

11. Digital agenda: A government priority. (n.d.). http://www.foreigninvestment.cl/index/plantilla4.asp?id_seccion=33&id_subsecciones2=8, accessed 13 April 2006.

12. World Economic Forum. (2005, March). IT Competitiveness Network Readiness Index 2005. Available at http://www.weforum.org/gitr, accessed 10 March 2008.

13. Chile country outlook. (n.d.). Available at http://www.pyramidresearch.com, accessed 1 March 2006.

Chile: The Digital Economy

The Chilean Government led by President Largos has complemented its physical infrastructure improvements with a legislative fabric of support for a digital economy. In his 2000 inaugural presidential address to the Chilean congress, President Largos emphasized the importance of the Internet and new technologies. He stated, "Chile could be at the vanguard of using information and communication technologies."[14] The Chilean Congress in 2002 passed a law authorizing the use of digital signatures and was the first country in Latin America to sign a joint statement on electronic commerce business practices with the United States.[15] In the period 2003–2004, the Chilean digital economy grew at a rate of 70% and accounted for 9.5% of Chile's gross domestic product (GDP) (US$6.7 billion).[16] The B2B component of the economy reached US$5.8 billion in 2004, a 93% increase of over 2003; while B2C commerce reached US$64 million, a 57% increase over 2002.[17]

Chile: The Construction Industry[18]

The Chilean construction industry in 2003–2004 had a growth rate of 4%, and, with a total annual investment of US$9.6 billion, represented more than 7.9% of the Chilean economy. The Cámara Chilena de la Construcción or CChC (Chilean Chamber of Construction), a private organization that promoted the interests of its 1,740 members, had represented the construction industry since 1951. The members collectively represented more than 80% of the construction investment in Chile. While the Chamber had a primary role in facilitating discussion with regard to the construction industry, it also acted as a vehicle through which private investments were undertaken. In 2004, the Chamber was the largest holding company in the Chilean insurance, pension, financial, and health care sectors, administering over US$10 billion in funds (equivalent to 13% of gross national product [GNP]) that involved over seven and a half million people (47% of the population).

The Founding of the Business

Brainstorming

In the fall of 2000, Juan Eduardo Correa was working as a strategy manager at Quinenco S.A., a large Chilean holding company. Successful in his position, he envisioned a long and rewarding career with the firm. Over the previous year, he had witnessed the dot-com phenomenon in North America and now he felt the urge to strike out on his own. He wanted to utilize his technical side and combine it with his strategic experience, which he hoped was the right mixture of talents to be an entrepreneur. While it would have

14. Largos-Escobar, R. (2000). Mensaje Presidencial, 21 deMayo 2000. Presidencia de Republica, Gobierno de Chile. Chile: Camera De Diputados. Available at http://www.camara.cl/hist/archivo/discurs/21m2000.pdf, accessed 10 March 2008.

15. Chile: Selling U.S. products and services. (n.d.). Available at http://www.buyusa.gov/chile/en/selling_us_products.html#9, accessed 13 April 2006.

16. Chile: Selling U.S. products and services. (n.d.). Available at http://www.buyusa.gov/chile/en/selling_us_products.html#9, accessed 13 April 2006.

17. Emerging Markets Economics. (2004, May 12). Chile's B2B to double in 2004. Emerging Markets Economy, London. Available at http://www.emergingmarkets.co.uk, accessed 10 March 2008.

18. All data in the paragraph come from: Molina, J. (2005). *Real estate and construction in Chile*. Santiago, Chile: Chilean Chamber of Construction.

been fairly easy and natural to stay in the financial services industry, he wanted to channel his energies into developing new technology. He recalled:

> I frequently met with two friends, Nicholas Errazuriz and German Bartel, from my days at Catolica University in Santiago. We started thinking of entrepreneurial ideas built around the Internet and after work one evening we converged upon the notion of starting a marketplace for the construction industry.

Bartel was working for a construction company at the time and had recognized that the fragmented nature of the Chilean construction industry's supplier base, in terms of the number of suppliers, items, and products involved, would be a perfect candidate for consolidation. He had also identified that an Internet-based website named "iconstruye" (the Spanish equivalent of "econstruction") and focused upon the construction industry would provide a suitable solution for consolidating procurement transactions.

The Business Plan

Having identified the opportunity, the iconstruye team knew that it had to act fast to develop its ideas into a coherent plan of action, preempting other entrepreneurs who were working on similar concepts. The team considered that the stakes were high, Chile being a relatively small market that would support only a limited number of B2B procurement companies; it was essential to be the first to provide a successful business model.

Brainstorming around German's idea, the group identified the need to be associated with the most influential members of the construction establishment. In Chile, influence and power in the construction industry historically had centered upon the CChC. "We knew that without the support of this institution, the idea would not happen. Having their backing would make success just more probable," recalled Correa.

Errazuriz, who was self-employed, decided to focus his efforts exclusively on performing research, meeting with interested parties, including the Chamber, and drafting the business plan itself. The other two founders remained in full-time employment, but after work, attended late-night meetings at the Chamber, refined the online procurement model, and worked with Errazuriz on the business plan (see Table 2 for the founders' biographies).

Partnering with the CChC

The team at iconstruye was not alone in understanding the influence of the CChC. During the 2 months it took to complete the first draft of the business plan, six other groups with B2B Internet site plans came forth to compete for the Chamber's support. Overwhelmed with meetings, the Chamber decided to identify a single company to support; it issued a request for proposals and a set a deadline. The challenge to become the electronic procurement portal officially backed by the Chamber provided the iconstruye founders with a goal upon which to focus their efforts. The 1-month deadline imposed by the Chamber for submission of a proposal forced the iconstruye team to hone its ideas quickly and to refine its model in order to make an effective presentation of its business plan.

The Chamber hired an investment bank to perform due diligence and negotiate stock options with each of the competitors, probing for weaknesses. The bank recommended two teams to go forward and make formal presentations. Correa reflected:

> Finally, the Chamber decided that we had the best idea and team; I think that the winning aspect was the team itself. I think the Chamber realized that it was going to

Table 2

Executive Biographies

Name	Biographical details
Juan Eduardo Correa	• 1995: Graduated top of class at Universidad Catolica de Chile, industrial engineering • 1995: Joined Enersis S.A. as project manager, financial performance analysis of the company's subsidiaries and performed new project investment analysis • 1999: Joined Quinenco S.A. as a strategy manager • 2000: Founder and CEO of iconstruye.com
Nicholas Errazuriz	• 1994: Graduated from Pontifica Universidad Catolica de Chile in Industrial Engineering. • 1994: Joined Soquimich S.A. as a financial planning engineer and logistics manager • 1998: Joined Grylan S.A. as a finance and operations manager • 1998: Founded Nixus, a consulting company • 2000: Founder and managing director of development and consulting at iconstruye
German Bartel	• 1997: Graduated Pontifica Universidad Catolica de Chile, BS in Civil Engineering, MS in Engineering • 1997: Joined the Department of Transportation Engineering at the University as a project engineer. • 1998: Joined Enaco S.A. as a project manager. • 2000: Founder and the commercial manager of iconstruye.

be a tough project that will change everyday. At the time the groups made their presentations, none of them knew exactly how to create a successful e-procurement portal, because, even in the United States or in Europe, there was not a good example of a successful plan in this area. When the Chamber realized the difficulties involved in the creation of an online business-to-business commerce site and the fact that the Chamber did not know where the project was going to end, it decided it needed the right team in place, a team that could adapt to change, make the right decisions and find the track, so in addition to the negotiation process and interviews, the Chamber took our résumés into account.

Having won the official backing of the Chamber, Errazuriz and Bartel left their jobs and officially started work full time for iconstruye.com in December of 2000, just 6 months after the team had started its planning. Correa had reflected at the time: "Since there is money to be made in perfecting this market, the Chamber feels we could find a way to make it more profitable."

Building the Business

The Initial Business Model

The founders knew that their business plan was just a conceptual strategy and that the building of a successful B2B model that would work in Chile would require a creative solution. The team based its first model upon creating a website to match buyers and suppliers, be they in Anica, Santiago, or Punta Arenas. Having examined a variety of software tools through which they could develop their product, the team at iconstruye decided upon a U.S. vendor who had an excellent reputation for supplier relationship management software. The group was conscious, however, of its financial resources and understood that it needed to maintain a low level of expenditure. The team felt that the outright purchase of a new software tool at this stage in their growth would be a disastrous mistake should the tool ultimately not match the requirements of the development team

and therefore decided to rent access to the software for 2 years from another company. Having identified the software tool, the iconstruye team started to implement a business model based upon charging buyers a low monthly fee (approximately $40) for using the system and charging the suppliers 1.5% of gross margin as a transaction fee. After 8 months of working with the rented software, the implementation was complete. Buyers and suppliers started to sign up and transact.

The Partnership Model

Having studied the failures of the North American B2B software vendors, Correa understood that two factors would play a significant part in the success or failure of iconstruye's revised business model. First, the iconstruye model needed to incorporate significant ownership and involvement by the largest buyers and suppliers in the construction industry, and, second, the iconstruye model would need to add value for the entire participant base by sharing the rewards and returns from the venture with investors and customers.

The team at iconstruye understood the powerful influence of the Chamber and its members in the Chilean construction industry. As a consequence, in January 2001, just 1 month after starting the company, the iconstruye team met with the Chamber and proposed that the associates of the Chamber be given the opportunity to invest in and become part-owners of iconstruye. The iconstruye team knew that the strength of its system was to foster and reinforce relationships between entities, rather than trying to change, threaten, or destroy them.

Correa explained:

In this way, these associates will have an incentive to become our future clients and drive business through the site. We undertook a series of presentations to potential investors and sold 29% of the company to those associates who wanted to invest in us. In all 56 companies decided to invest. Today we have 60 shareholders, the Chilean Chamber has a 60% stake, the 57 other shareholders own 29%, and the three founders own the remaining 11%. We have a call option to buy 19% back from the Chilean Chamber, so we could have 30%, and the Chilean Chamber would have 41%. Those should be the final numbers but, of course, we have to be able to buy those shares and it will cost a lot of money; that's one of our challenges.

The Pilot Year

During 2001–2002, iconstruye's first operational year, the team's association with the Chilean Chamber proved extremely valuable. The Chamber acted as a stabilizing influence on the company while the iconstruye team identified market dynamics and trends. The software license iconstruye had initially issued to its customers soon started to show its limitations in relation to the traditional intercorporate and intracorporate procurement processes used in Chile. Historically, Chile had undergone periods of high inflation resulting in little use of catalogues that listed products together with prices. Similarly, long-term contracts were also rare. This uncertainty had resulted in a culture that primarily used request for quotes (RFQs) followed by a negotiation to set the final price. Unfortunately, the software iconstruye had licensed was based upon a North American catalogue structure that listed products and prices. This was a style of pricing and procurement practice that iconstruye knew did not fit comfortably into the existing processes and practices of the customers iconstruye was targeting. As Correa recalled, "it was very

expensive and frustrating to have software that was not offering the functions that our clients were asking for and to not have the internal code so we could fix it ourselves." The team recognized that the system it had licensed would not be adequate for the RFQ-negotiation procurement model used in Chile and other Latin American countries. The team knew it had to build its own system and that the backing of the Chamber, the member companies, the shareholders, and the board of advisors would permit them time to work through the issues.

Refining the Business Model

Correa and the team were working 100-hour weeks in order to capture as large a market share as possible, as quickly as possible. The most dangerous potential competitor to iconstruye was thought not to be another start-up, but rather the threat of the large construction firms collectively creating their own system, or the threat of a powerfully placed individual firm building a system. It was feared that through sheer size, one of the companies could cause the industry to converge upon some other procurement model. The team at iconstruye understood that it had to demonstrate the adoption of the system by a significant percentage of the industry's members, including the largest companies in the industry, in order to build adoption momentum in smaller companies.

The team's first step was to ensure alignment between its business model and the actual mechanism through which the construction industry procures its products. They each knew that this was not an easy task, as the industry's online procurement model was still evolving in terms of client expectations. Given this, the team decided that one of its first priorities was to modify its revenue model. Iconstruye originally had charged suppliers 1.5% of gross margin as a transaction fee; however, the team had determined during the pilot year and through input from board members that certain suppliers were not willing to pay above 1% to transact on the system. Considering this, iconstruye modified the fee structure: 1.5% for suppliers selling products not classified as a commodity (if the total sale was above 12 million pesos, the fee was reduced to 0.8%) and 0.7% for commodity products.

The pilot year also provided the team with time to understand the diversity of the Chilean market and its software requirements. These ranged from extremely large construction firms who required complete systems to small micro-suppliers of specialty products who required only a particular or unique software function. In response iconstruye revised its software pricing structure based on the size of the client company and the particular modules it would use. The team knew that it had to cover its costs and decided to charge large companies a higher joining fee, as they would require a dedicated on-site account manager for up to 6 months and the possibility of considerable software modifications. They also wanted, however, to remove the incentive for the client to develop its own system. Therefore, in order to reduce the client's cost of entry to the iconstruye system, they created a pricing structure that provided discounts based upon the volume of transactions a company performed on the system.

The second issue facing the team was that of changing suppliers' purchasing methods. Changing organizational behavior was a challenging task in an entrenched industry that had never undergone technological change on a scale iconstruye was proposing. The iconstruye team devised a strategy that focused first on finding highly visible early adopters, i.e., well-known companies that wanted to innovate. The team initially identified a group of early adopters within its investors and then worked to convince the executives of these companies that it was in their interest to change their procurement process, as the iconstruye system would reduce their costs and make them more productive. The second

step of the iconstruye strategy centered upon convincing the procurement managers who actually used the system on a daily basis that the system was an aid, not a hindrance. To accomplish this, iconstruye hired eight account executives to work at client sites to ensure that user issues and queries were solved efficiently and effectively. The team recognized that while this level of training would be very expensive, without it, the end users could become disenchanted if simple problems were not solved quickly and could revert back to their old procurement methods or contemplate building their own system.

Pursuing its strategy of implementing a technology solution together with the flexible revenue sharing model and the team's continuing efforts to widen the transactional base of the system, iconstruye experienced a 400% growth in transactions during 2002–2003. The iconstruye system processed over 17,000 transactions in the first quarter of 2003, accounting for US$25.3 million in trade.

Customization and Consolidation

As the system's functions became more closely aligned to the needs of the customers, and as the initial excitement surrounding Internet e-procurement wore off, iconstruye faced two new issues. First, its customers became more interested in having their sites customized, and, second, some potential clients resisted the use of software they had not developed themselves. The strategic response from iconstruye was similarly two-pronged. In response to clients' need to differentiate themselves, the iconstruye team considered its ability to provide customized procurement software solutions to be one of its competitive strengths. The creation of customized tools was an expensive proposition for clients, but provided a profitable source of added revenue for iconstruye. To overcome resistance from companies who were considering building software rather than purchasing it, the iconstruye team developed a strategy of working with each individual construction company. The iconstruye team discussed with potential clients the technical difficulties associated with building an internal website dedicated to a specific group of suppliers, as well as the difficulties associated with building and maintaining the transactional aspect of a website. The iconstruye team worked to show suppliers the high resource costs they would incur if they wanted to go into each buyer's website in order to complete individual transactions.

Correa explained:

> Maybe you might find the very largest companies building their own systems, such as Chile's Codelco, (the world largest copper mining company). They have the resources and willpower to spend the money required on software development and training. Why would even a large company bother hiring staff to train people on how to use their website, especially if there is a third party doing it for free? That is the best option you can have.

The New Software

In January 2003, the iconstruye team celebrated the second anniversary of the company's founding. The executive team also rejoiced that its original software lease was about to expire. Iconstruye had found it increasingly difficult to offer customized solutions using the leased software platform. The team had decided several months earlier that iconstruye would require total access to the code of any system with which it worked. Therefore, developing a proprietary system had become a priority. Over a period of a year working with Microsoft Consulting Services, iconstruye developed its own proprietary solution using Chilean software engineers. The team at iconstruye felt that apart from

lower labor costs, the use of local engineers had helped in other ways. According to Errazuriz, "Chilean construction companies are comfortable using our system because they have helped design it, through two years of collaborative hard work." Since these companies had been so involved in developing the system, the training and conversion burden falling upon the iconstruye account executives dramatically diminished.

Chile Compra

Having built a strong, stable, and scaleable software solution that contained all the features a firm performing e-procurement in Chile would require, iconstruye looked into expanding the scope of its client base and reducing its dependence on the construction industry. During this period, the Chilean government, recognized by the World Bank[19] for its leadership in government-to-business and government-to-citizen technology initiatives, had recognized the advantages of an e-procurement system for its own procurement and issued a request for proposals. The team at iconstruye realized that developing a proposal for a project of this size was a daunting task, especially for a 3-year-old start-up. The team also recognized, however, the potential of the project and that if its bid were successful, creating the Chilean government's procurement portal would allow iconstruye to become not only a central part of the government's initiative in information and communication technology (ICT), but also to increase the company's visibility, reach, and, of course, value.

The team decided that since iconstruye had the necessary software, experience, and procurement expertise, the company would bid on the project. The team was also realistic enough to understand that it could not develop such a system alone. Iconstruye needed a partner with a background in doing business with the government. The team approached SONDA, Chile's biggest system integrator, and discussions between the two companies revealed its interest in the project. SONDA understood the value of iconstruye's software, and valued the experience iconstruye had gained during development of Chile's largest e-market place. The two companies formed a 50/50 partnership and entered the bidding. The Chilean government received 10 proposals, three of which passed the technical due diligence and advanced into sealed bidding, selection being based upon lowest price. Correa recalled the outcome: "When the Government opened the three envelopes, we were the lowest priced so we won." By the end of 2004, the Chile Compra website had conducted more than 75,000 transactions (auctions and requests for quotations) worth a total of US$694 million.[20]

Future Directions

After only 3 years of existence, iconstruye had a positive cash flow. The team attributed its success to its development of creative solutions to the many difficult problems encountered during that time. The company had devised a new electronic procurement system for which it owned the code, and had shown through its deployment in the Chile Compra project that the system was stable, scaleable, and robust. The team thought that it had demonstrated that the quality of Chilean software compared with any in the

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19. e-Government: The World Bank. (n.d.). Available at http://www1.worldbank.org/publicsector/egov/eprocurement_chile.htmorldbank.org/publicsector/egov/eprocurement_chile.htm, accessed 13 April 2006.
20. Chile Compra. (n.d.). Available at http://www.chilecompra.cl, accessed 13 April 2006.

world and believed that the company had benefited from the cost advantages associated with developing it in Chile. In the team's judgment, iconstruye had overcome the lack of traditional venture capital sources by building a strong relationship with the CChC, the equivalent in Chilean terms of an institutional investor.

Correa was sure that a decision regarding the future growth strategy of iconstruye was required. He challenged his team to identify options, and it identified several promising possibilities. The first was to expand by bidding to provide additional online services to the Chilean government. A second option was to expand by bidding for government contracts in other Latin American countries. Finally, a third option was to expand into the North American market by providing Spanish-language procurement software to companies that did business with South American entities.

Provision of Services to the Chilean Government

The government of Chile through the presidential ICT initiative facilitated access to many branches of government through the Internet. It also expressed the wish that the private sector take the lead in developing Internet-based services while working under government oversight. Each presented a potential opportunity for iconstruye.

Portal Tramite Facil ("Easy transaction"). The design of the *tramite* portal was intended to facilitate easy public access to information on over 1,400 government-related procedures and to allow the public to purchase government documents through the website. The site received approximately 30,000 visits per month.[21] The government in 2004 was looking to expand its Internet-based public services in 13 areas, building upon the *tramite* website. One example involved the health services, where the government proposed the creation of an electronic patient record system (known in Chile as an Electronic Clinical History[22]) that would contain the health information of all citizens. The government also proposed a procurement portal especially developed for the health service. Health care is a constitutional right for every Chilean citizen, and in 2002 accounted for approximately 7% of GDP.[23]

Servicio de Impuestos Internos: SII (The Internal Taxation Service).[24] The Chilean government has been a proponent of moving its citizens to online payment of taxes. The SII system originated as an information portal in 1998 and accepted its first tax submission the following year. It facilitated tax preparation, but taxpayers also could use third-party software to prepare taxes and file electronically through SII. In 2004, the site received over 1.6 million page views a month and led to 1.6 million electronic tax returns, representing 85% of the Chilean population and providing US$1.9 billion to the exchequer.[25] The government proposed to build upon its SII success with the development of a system for

21. Trámites, e-government. (n.d.). Available at http://www.tramitefacil.cl, accessed 17 April 2006.

22. Equidad con Tecnología. (n.d.). Available at http://www.stockholmchallenge.se/data/equidad_con_tecnologia, accessed 17 April 2006.

23. Jackson, Y. (2002). *Mission statement.* Services Matchmaker Trade Delegation, Mexico City, Mexico; Santiago, Chile; and Caracas, Venezuela, April 8–16, 2002. Available at http://www.trade.gov/doctm/serv2002.htm, accessed 10 March 2008.

24. Unless otherwise noted, all data in the paragraph come from: SII online. (n.d.). Available at http://www.sii.cl/, accessed 17 April 2006.

25. The World Bank: e-Government. (n.d.). Available at http://www1.worldbank.org/publicsector/egov/chile_taxcs.htm, accessed 17 April 2006.

collecting taxes from the country's 950,000 commercial organizations. An SII survey in 2003 showed that 76% of Chile's companies that file sales tax (value added tax) declared that they were interested in paying taxes over the Internet, while 17% preferred to pay over the telephone.

National Customs Service. In 2004, Chile had international trade valued at US$56.0 billion, and over the previous decade had actively developed its trade relationships with countries on the Pacific Rim. Largest among these trading partners was China. In 2004, *China Daily* predicted that China's trade with Chile would exceed US$10 billion by 2008.[26] (U.S.–Chile bilateral trade in 2004 was US$6.4 billion).[27] In its 2004 ICT initiative, the Chilean government had also recognized the need to build an array of electronic customs services[28] to promote international trade. These systems included websites to provide technical information aimed at commercial entities together with publications aimed toward a public and tourist readership. The government also proposed the "Isidora" project, an Internet-based system that would improve and support inter-government customs formalities, law enforcement, and customs transactions.[29]

A Latin Expansion Option

Historically, technological infrastructure expenditures across Latin America region have been uneven.[30] In 2004, Chile ranked 32nd on the networked readiness index (NRI),[31] followed by Brazil, ranked 46th, Mexico (60th), Columbia (66th), Panama (69th), and nine other Latin and Central American countries that ranked below 70.[32] Between 2000 and 2005, several governments had announced plans to deploy technology systems, the largest of these Mexico's technology initiative. The *Tramitanet Portal de Mexico* ("transaction network of Mexico") initiative, launched in January 2002, aimed to enhance legal transparency and improve the collection of revenues. President Fox wished to develop the technological infrastructure of Mexico, a country with a population of 104 million (2004 est.), and a labor force of 34.11 million (2003).[33] Mexico in 2005 had approximately 12 million Internet users and experienced a connectivity growth rate of 351.6%[34] during 2000–2005. The *tramitanet* initiative had three major modules; in the eyes of iconstruye's team, each presented an opportunity:

26. Jin, Z. (2004, August 27). China-Chile FTA talks switched to fast track. *China Daily*. Available at http://www.bilaterals.org/article.php3?id_article=527, accessed 10 March 2008.

27. U.S.—Chile trade. (n.d.). Available at http://www.dti.gov.za/econdb/raportt/USA%20Trade%20by%20 SITC3370.html#U.S.A.%20TRADE%20%20(million%20US%20dollars)%20%20Chile, accessed 17 April 2006.

28. Gobierno de Chile, Servico Nacional de Aduanas. (n.d.). Available at http://www.aduana.cl, accessed 17 April 2006.

29. Gobierno de Chile, Servico Nacional de Aduanas. (n.d.). Available at http://www.aduana.cl, accessed 17 April 2006.

30. The eMarketer group (April 20, 2005, http://www.emarketer.com) predicted IT spending in Latin American to be $24.6 billion in 2004.

31. NRI measures the degree of preparation of a nation or community to participate in and benefit from ICT developments.

32. World Economic Forum. (n.d.). Available at http://www.weforum.org/gitr, accessed 13 April 2006.

33. The Central Intelligence Agency: Factbook Mexico. (n.d.). Available at http://www.cia.gov, accessed 17 April 2006.

34. Central America Internet usage and population. (n.d.). Available at http://www.internetworldstats.com/ stats2.htm#central, accessed 17 April 2006.

Tramites (Transaction Network). An online catalog of 2,962 documents[35] covered both federal documents and documents from six of Mexico's 31 states together with instructions pertaining to the documents' completion and use. Government office addresses were also in the databases. The government wished to extend the system's coverage.

Tramites Electonicos (Electronic Forms). This system provided information on the submission of 68 *tramites* (documents).[36] Government functions and administrative offices covered by the system included social security, agriculture, education, and energy. In 2002, Mexican citizens filed 400,000 *tramites* electronically. The government wished to expand the system to cover all federal and state offices and their *tramites*.

Quejas y Denuncias (Complaints and Denouncements). This portal was designed to facilitate citizens' reporting of complaints and issues (irregular acts) to the authorities. In 2001–2002, 179,807 citizens[37] used it to register complaints.

In 2002, the "*Secretaria de Contraloria y Desarrollo Administrativo*" (SECODAM), which had managed the *tramitanet* initiative from inception, was allocated US$67 million (the government had originally projected a 2002 operating budget of approximately US$200 million[38]). SECODAM now looked for ways to commercialize aspects of the system together with the possibility of outsourcing development.

North American Options

In the United States, during 2004–2005, the percentage of Hispanics in the population rose by 3.3%. The 42.7 million people of Hispanic origin accounted for 14.4% of the total population.[39] In 2004, Hispanic Business Research estimated that the Hispanic sector of the U.S. economy contained 3.2 million businesses that would generate revenues of US$465 billion by 2010.[40] Latin America had continued to grow as a trading partner with the United States, and by 2004, the state of Florida alone had trade valued at $38.8 billion with South and Central America, accounting for almost half of Florida's international trade. To facilitate trade and commerce, several states, including Florida, had started development of English-language procurement e-marketplaces.[41] Additionally, President George W. Bush's administration initiated a Spanish-language website at the Department of Commerce to allow Hispanic businesses better access to information on government grants, trade, and high-tech issues.[42] Iconstruye's team saw several opportunities in developing a procurement system for the Hispanic market in the United States.

35. Tramitanet, Mexico. (n.d.). Available at http://www.tramitanet.gob.mx, accessed 17 April 2006.
36. Tramitanet, Mexico. Available at http://www.tramitanet.gob.mx, accessed 17 April 2006.
37. Kosice, R.M. (2003, June). Mexico's Tramitanet portal. The World Bank. Available at http://www.worldbank.org, accessed 10 March 2008.
38. The project had but no dedicated staff—the 60 full-time IT staff and 60 IT consultants have responsibility for several other government systems. Source: Kosice, R.M. (2003, June). Mexico's Tramitanet portal. The World Bank. Available at http://www.worldbank.org, accessed 10 March 2008.
39. The U.S. Census. (n.d.). Available at http://www.census.gov/, accessed 17 April 2006.
40. Hispanic-owned businesses: Growth projections, 2004–2010. (n.d.). Available at http://www.hispanicbusiness.com/, accessed 17 April 2006.
41. My Florida marketplace. (n.d.). Available at http://dms.myflorida.com/dms/purchasing/myfloridamarketplace, accessed 17 April 2006.
42. Kellman, L. (2003, January 3). Spanish-language Commerce Department web site debuts. *Government Technology Magazine*. Available at http://www.govtech.net/magazine/channel_story.php?channel=25&id=37173, accessed 10 March 2008.

A Spanish Language Software Market Opportunity. In 2001, the Gartner Group predicted that the market for e-marketplaces and private exchange software in the manufacturing sector alone would amount to $4.8 billion by 2004.[43] Within the manufacturing sector, exports by Hispanic companies had totaled US$1.8 billion in 2004 (an increase of 17.5% over 2003), with 25 Florida companies accounting for US$1.4 billion.[44] The provision of a Spanish language procurement system run in an outsourced mode appeared to be an opportunity for iconstruye.

The Federal Procurement Data System Reengineering Project. In 2000, the U.S. government through the U.S. Hispanic Chamber of Commerce's Federal Sector Procurement Council identified a need to assist the Hispanic business community with respect to federal procurement opportunities and to have a Spanish-language procurement system in place as quickly as possible.[45] "Pro-Net"[46] (Procurement Marketing and Access Network), an English-language system created in 2000, provided an electronic gateway of procurement information for small businesses. By 2005, the Department of Commerce had not deployed a Spanish-language version.

Conclusion

The sun was rising over the Andes and light streamed through the boardroom windows. The iconstruye team always thought this vista amplified its creative abilities. Seated at the head of the table, Correa addressed the group: "As you all are aware, later this month I have to make a presentation to the investor group, outlining iconstruye's plans for growth. We need to decide if we wish to pursue one of these proposals. Or perhaps you have other options . . . ?"

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43. Venecia, A., Cruz, G., Dickinson R., Gunasekaran, S., Roster J., Sood R., et al. (2001, September). *Assessing e-market opportunities in vertical markets: Success, disillusionment and future outlook* (Gartner Consulting Research Document No. ITSV-WW-EX-0036). Stamford, CT: Gartner Inc.
44. Caplinger, M. (2004, July/August). Foreign targets. *Hispanic Business Magazine*, p. 48.
45. U.S. Hispanic Chamber of Commerce: Programs and initatives. (n.d. Available at http://www.ushcc.com/programs.html, accessed 17 April 2006.
46. PRO-*Net's* functions to the E-Gov Business Partner Network. (n.d.). Available at http://pro-net.sba.gov, accessed 17 April 2006.