

Urban Highway Concessions in Santiago, Chile

(Sistema Norte-Sur, Costanera Norte, Sistema Américo Vespucio Norte and Sistema Américo Vespucio Sur)

WHY READ THIS CASE STUDY?

- A** This is the first example in the world that urban highways were implemented in a city almost simultaneously with free-flow toll charges that are interoperable, as the highways were tendered to four different operators. These projects followed the smaller, initial PPP development programs.
- B** They provide a number of lessons, especially for planners, since the problems that have emerged have not come from the "hard" areas like engineering and ITS (Intelligent Transport System) technology, but rather from the "soft areas" like the performance quality of service as well as planning and social impacts.
- C** The impact of planning and institutional weaknesses has led to the Chilean government spending much more money to support these urban highway concessions than it expected for example, subsidies for additional projects or monetary compensations to the concessionaires.
- D** Consequently, while the Chile government made mistakes, it started with smaller PPP projects, it was not afraid to innovate and it updated and adjusted its PPP framework with the experience gained to mobilize substantial private finance and to implement a number of successful PPP projects.

The Chilean Concessions Program

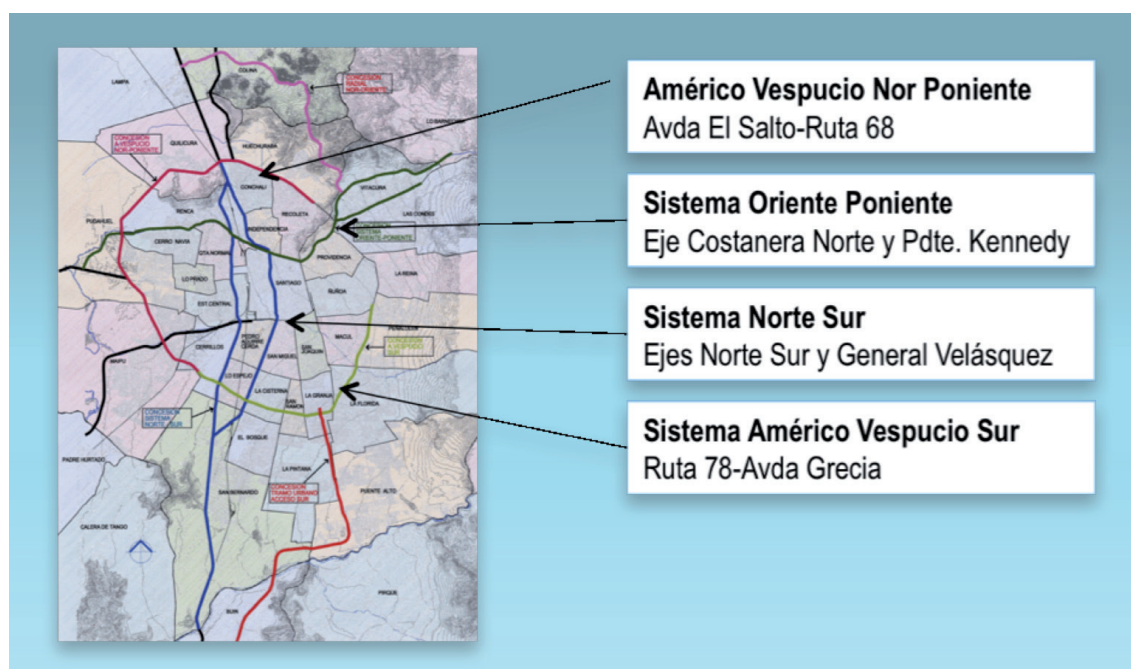
Urban highways are an important part of the road concessions program implemented by the Chilean Government beginning in the early 1990s. The program has allowed the country to be equipped with a modern network of inter-urban and urban highways in only a few years, in addition to airports, hospitals and prisons.

The PPP (Public-Private Participation) model chosen by the Chilean Government is: Build, Operate, Transfer (BOT), with a call for an international tender process. Financing is obtained by the private sector, which regains its investment through toll collection. However, the government has financed certain complementary projects not contained in the tender ground rules, in addition to guaranteeing the road projects a minimum income in the event of a significant drop in vehicle traffic, which ensures up to 70% of the investment plus maintenance and operation costs.

It is important to highlight that financing transportation infrastructure with tolls is an old practice in Chile that dates back to the 19th century. Indeed, private investment on roads, was first contemplated in Chilean legislation in 1835, but had practically disappeared by the 1990s. This explains to a great degree why they have been so well received by the population and with a low level of evasion. For example, of the total number of monthly transactions for the urban highways (55 million on average), only 0.3% correspond to the payment of penalties (150,000).

According to information from the Public Works Ministry (MOP - Ministerio de Obras Públicas), total private investment in highways in 2005 was USD 5.3 billion, of which 19 are (inter-urban) highway projects for USD 3.7 billion, and of which 4 are the inter-operable urban concessions (Sistema Norte-Sur; Sistema Oriente-Poniente also called "Costanera Norte"; Vespucio Norte and Vespucio Sur) representing a total private investment of USD 1.5 billion.

Project description



The four projects are summarized below.

Sistema Norte-Sur (North-South System)	
Investment Pledged Technical Bid:	USD 455.2 million
Public investment:	USD 144,8 million (USD 99,2 million in 2005)
Total investment:	USD 600 million
Award Decree:	DS: MOP N°4153, Sept. 14, 2000
Beginning of concession:	July 3, 2001
Concession Duration:	30 years
Provisionally Operational:	December 2004 (First Stretch), May 2006 (final stretch, General Velásquez bypass)

Concessionaire:	Autopista Central, S.A (ACS, BELFI, SKANSKA, BROTEC S:A)
Length:	61.2 km.
Toll charge points:	28
Inhabitants benefited:	1.8 million
Sistema Oriente-Poniente (Santiago East-West highway System)	
Investment Pledged Technical Bid:	USD 389,2 million
Public Investment:	USD 210,8 million ((USD 111,3 million in 2005)
Total investment:	USD 600 million
Award Decree:	DS: MOP N°375, Feb 24, 2000
Beginning of concession:	July 3, 2001
Concession Duration:	30 years
Provisionally Operational:	April 2005.
Concessionaire:	Costanera Norte S.A. (Autopista do Pacifico S.A; Autostrade Sud America S.R.L)
Length:	44 km.
Toll charge points:	16
Inhabitants benefited:	1.4 million
Sistema Américo Vespucio Nor-Poniente (Vespucio North-West System)	
Investment Pledged Technical Bid:	USD 328.3 million
Public Investment:	USD 21,7 million (USD 0 in 2005)
Total investment:	USD 350 million
Award Decree:	DS: MOP N° 493, March, 2002
Beginning of Concession:	April 24, 2003
Concession Duration:	30 years
Provisionally Operational:	Jan 5 2006
Concessionaire:	Soc. Conces. Vespucio Norte Express S.A.
Length:	29 km
Toll charge points:	15
Inhabitants benefited:	1.5 million
Sistema Américo Vespucio Sur (Américo Vespucio South System)	
Investment Pledged Technical Bid:	USD 263.4 million
Public Investment:	USD 386,6 million (USD 0 in 2005)
Total investment:	USD 650 million
Award Decree:	DS: MOP N° 1209, August 20, 2001
Beginning of the concession:	December 6, 2002
Concession Duration:	30 years
Provisionally Operational:	April 2006
Concessionaire:	Soc. Conces. Autopistas Metropolitanas S.A. (Iti- nere Chile S.A., Sacyr Chile S.A., Acciona Con- cesiones Chile S.A, Acciona S.A.)
Length:	24 km
Toll charge points:	14
Inhabitants benefited:	1.8 million

The technological aspects

The electronic free-flow tele-toll inter-operable collection system, "Televía"

The inter-operable free-flow tele-toll known as Televía allows users to avoid stopping when paying the toll, passing under a portico that permits information to be exchanged for automatic invoicing. To use it, they must sign a contract with one of the concessionaires. At the end of each month, users receive a bill for the service at their postal or electronic mail addresses.

Occasional users and/or those who do not live in the city can buy a day pass. The toll charge points take a picture of the license plate and the central system compares it with the database for daily passes that have been activated. It is valid for 24 hours on the four urban concessions.

The data transfer between the vehicle and the portico is carried out by an electronic device called a Televía, which is affixed to the vehicle's windshield.



The Televía allows drivers to use any of the urban highways in the inter-operable system.

There are currently 1.5 million tags distributed on free loan (owned by the government and not the user), which will gradually increase, because the capital's carpool has grown quickly since 1990 (10.9 people/vehicle in 1990 and 6.6 people in 2005).

For reference, Santiago's population is 5.7 million inhabitants (2002 Census) and it is considered that there are 16 million vehicle trips per day.

The demographic projection of Santiago is that of a city of 8.1 million inhabitants by 2025.

MOP requirements in the Tender Ground Rules

The tender ground rules establish that bidders must include the standard to be used in their technical proposal. The first urban highway that was awarded included the following technical standard in its proposal: CEN TC 278 – GSS - A1.

Likewise, the ministry established the principle of a plurality of tag suppliers to avoid monopolies. There are currently three suppliers: Kapsh, Q-Free, CS Route. The tags must be certified by certification agencies that are internationally recognized, in addition to being approved by the MOP.

Fees

Fees were established in the tender ground rules and are determined based on:

- The number of kilometers in a given segment
- Vehicle type

- Time of day: Off-peak, Peak, Saturation (Saturation charges come into effect during times when the roads are operating at far lower speeds than they were designed for because of the amount of traffic).

The tender ground rules indicate that in all cases users are obliged to pay an Off-peak Base Fee when average speeds are at or around the road's design speed (80 km/h).

According to the contract, the Peak Base Rate ought to come into effect during those times when the highway is operating at speeds that are below the road's design speed. In other words, when average speeds are less than 70 km/h and over 50 km/h.

The Saturation Rate is applied during periods when, thanks to high levels of traffic, vehicles are moving at speeds far below those the road was designed for, or less than an average of 50 km/h.

National Registry of Tele-poll Users

The MOP has a single database for the Televías that have been distributed in order to make the commercial inter-operability of toll collection possible. The main data is: user identification, license plate number, vehicle class, tag manufacturer reference. The concessionaires must feed information into the database and can gain access to it.

Infringements

In the event that users do not pay the amount owed for two consecutive months, the concessionaire that they owe the debt to can disable their Televía and begin legal action in local courts for infringing the terms of use. The concessions law in force establishes a fine of 40 times the amount owed. As of May 2008, only 0.3% of monthly transactions required sanctions.

Experience during the operational phase of the Concession

The main problems that have emerged during the implementation of the inter-operable urban concessions do not have to do with the technological aspects, but rather with the planning, coordination, and the comprehension of new expectations on the part of users. These are problems or flaws that are not exclusive to the urban concessions and can also be seen in the inter-urban concessions.

Flawed service quality

Aspects related to the quality of customer service were not appropriately considered by the ministry or the concessionaires. This can be explained by the dominance of professionals and experiences from the construction sector.

"During the tender process we did not worry about the quality of service and we did not deal with it using the proper professional specialties (...) We are only now working on issues of user satisfaction."

Valentina Flores, head of communications unit.

"... complaints take place in areas where inter-operability is not regulated – no longer in a technical sense, but in terms of commercial and procedural interoperability. And that – lead and coordinate – is where the role of the government is ineludible."

Carlos Encalada, Head of Technological Innovation and Development Unit.

Planning failures:

The road concessions were not designed in an integrated way, but rather as separate road projects, which made itself self-evident with connections, especially between the Sistema Norte-Sur and the Costanera Norte.

Likewise, there were serious planning problems with the distribution of the tag: the MOP had anticipated free delivery of tags for up to a certain number of users, carried out through the concessionaires. The concessions contracts foresaw a certain number of tags being distributed, but since the first concession to enter into operation was the Sistema Norte-Sur, demand for the tag was centered exclusively upon it and the number considered in the contract was surpassed, which caused stocks to be depleted and discontent among users/potential users.

According to the director of tolling for Autopista Central S.A (the Sistema Norte-Sur, highway) there was also lack of support from the concessions department during the implementation of the system:

"Nobody had any experience in urban concessions of this kind ... The Ministry expected us to be able to coordinate because it had a dogmatic vision of the market's regulatory capacity ..."

The correct role that the ministry ought to play is a semi-active one, meeting with us and helping us to find solutions together. Instead, they were totally absent."

Salahdin Yacoubi, director of tolling, Autopista central S.A.

In addition to the inexperience on the part of all parties involved, there were the ideological differences between MOP officials regarding regulatory mechanisms: market vs. more direct government intervention. The dominating view though was to let market work that is not interfering in coordination matter between concessionaires.

"There continue to be viewpoints in the Concessions Coordinating Board that say, well, the concessionaires are the ones who have to come to an agreement here, something like saying let the market work. But the market is not at work here. The market is not at work because there are four concessionaries with at least two different clients and with shareholders that sometimes get along well, while at other times they do not."

Carlos Encalada, Head of Technological Innovation and Development Unit

These differences are not exclusive to concessions, but rather are a reflection of an open debate in Chile today, as can be seen in the education or public transportation systems.

Problems related to public participation:

The MOP did not take sufficient account that some of the population affected by the construction of the highways was likely to oppose the projects, which in fact they did and significantly increased the government's investment costs and caused the execution of the project to be delayed. The government then had to pay significant compensation to the concessionaire, which likely could have been avoided.

Yet it would possibly be inappropriate to seek the origins of such flaws in deficient project preparation. As a matter of fact the MOP, more than any other ministry in Chile, has invested large sums of money on environmental and urban impact studies. A special "public participation unit" was even created when the Concessions Program began.

Such problems can be better explained by structural reasons related to MOP institutions (traditions of centralized and authoritarian style of bureaucracy), finance (cost reductions to maximize benefits), and politics (electoral calendar).

Unexpected lawsuits from the concessionaires

According to the concessions law that is currently in force, lawsuits must be presented to a conciliatory commission comprised of 3 members, 2 of which are named by each of the parties involved and one appointed by mutual agreement. To date, the Chilean government has had to face multimillion dollar lawsuits for breach of contract.

For example, in May 2007 the concessionaire of the Américo Vespucio South System presented a lawsuit against the MOP for USD 100 million, mainly due to delays in expropriations, the rising cost of steel and oil, and for failing to meet the deadlines for transferring services. Other lawsuits for a total of USD 500 million had previously been presented by the concessionaires of urban highways (by August 2007 the government had paid over USD 200 million).

Major increase in public investment

The planning mistakes caused the Chilean government to significantly increase public investment through complementary agreements. For example in the Sistema Américo Vespucio Nor-Poniente, public investment went from 0 in 2005 to USD 386.6 million today.

Yet the Chilean government had expected the highway concessions to be entirely financed by the private sector with no public subsidy.

Conclusions and Lessons learned

The urban concessions mark a new milestone in the Chilean road concession program. In general they have been successful if success is measured by the number of bidders in the tender process, the completion of works, and their profitability for the private sector.

However, the flaws that have emerged and which were described in the previous point allow one to learn a few lessons for the future:

Do not neglect the operation phase (Contract Management) during planning

Because of professional and institutional culture, the administrative departments in charge of preparing tender processes tend to concentrate on aspects related to engineering and construction, while at the same time neglecting the operational phase, despite the fact that it constitutes the majority of a concession.

Thus, the MOP still does not have systematic information available regarding users' level of satisfaction or payment preferences and depends on the information that concessionaires can give it regarding relevant issues like users' billing preferences (one bill per concessionaire or a single bill).

To provide a solution to the main flaws identified in the operative phase, in 2007 the MOP sent Congress a draft bill to modify 2 main aspects of the current concessions law: greater attention paid to the quality of service with the creation of a Superintendence (a semi-autonomous regulatory body) and replacing the Conciliatory Commission with an Arbitration Court comprised of three expert professionals whose decisions must be in keeping with the law (the Conciliatory Commission ruled "in conscience").

Undertake real public consultation processes

Not taking the opinions of the affected population into account from the outset and in an opportune fashion has been very costly for the government, both on a financial level (compensation for delays), as well as on a political one. Though this has not resulted in electoral sanctions, there is a general perception among the Chilean population that the government has favored the private interests of the concessionaires over users' interests.

Integrated planning of concessions even if they are tendered separately

Huge amounts of money would have been saved and a number of road connection problems could have been avoided if the projects had been planned (designed and well thought out) jointly, or at least coordinated with, teams that have complementary skills.

Reinforce coordination between the different bodies in the institution in charge of the concessions to avoid repeating problems.

Coordination allows information feedback and in that way improved projects. However, in practice it is hard to implement such coordination in a systematic way because of the work rhythm of the work teams in charge of preparing the projects to fulfill the tender process schedule.

It is often the case that entire chapters are copied from the tender ground rules of projects that have already been tendered into those of projects yet to be tendered. Because of this, currently the Department of Concessions is considering formalizing a coordinating body among its employees to maximize information feedback.

Adopt a pragmatic approach

Unlike with the first tag distribution, the Technological Innovation and Development Unit has considered playing a more active role in the distribution of more tags, which will have to be replaced as of next year as the batteries run down.

"We now hope to achieve a more rational distribution of the devices, including on a geographic level ... Together with the Transport Ministry we are considering [changing Tag batteries] at the same time that cars undergo their [annual] technical review."

Carlos Encalada, Head of Technological Innovation and Development Unit

Further information

Public sector



<http://www.concesiones.cl>



http://www.aic.cl/documentos/presenta_bull.ppt

Concessionaires' Websites



<http://www.copsa.cl/>



<http://www.autopistacentral.cl>



<http://www.vespucioexpress.cl>



<http://www.costaneranorte.cl>



<http://www.vespuciosur.cl/>

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