

[Final Report]

By WeGO, Seoul Metropolitan Government

For Overseas city e-Government Application Feasibility Study Project

Smart Citizen Service HUB (AIO) with Smart Card In terms of citizen`s service satisfaction

December, 2012

Buenos Aires City Government
Seoul Metropolitan Government

WeGO (World e-Government Organization of Cities and Local Governments)

Preface

The “Feasibility Study on Smart Citizen Service HUB (AIO) with Smart Card has been produced by the Feasibility Study Project Team under the supervision of Buenos Aires city government and Seoul Metropolitan Government. Seoul Metropolitan Government, Buenos Aires city government and the team have the ownership on the modification and revision on this report.

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Abbreviations

AIO	All in One
BA	Buenos Aires city government
C/S	Client/Sever
CPU	Central Processing Unit
DBMS	Database Management System
EA	Environmental Analysis
e-Gov	e-Government
e-Signature	Digital signature scheme for providing the authenticity of a digital message or document
e-GMP	e-Government Master Plan
F/S	Feasibility study
H/W	Hard Ware
ICT	Information and Communication Technology
ICTPA	Information Communication Technology and Post Authority
IDC	Integrated Data Center
IRR	Internal return of investment
ISO	International Standardization Organization
KEXIM	Export Import Bank of Korea
KISDI	Korea Information Society Development Institute
KOICA	Korea International Cooperation Agency
MPRP	Mongolian People`s Revolutionary Party
MNDP	Mongolian National Democratic Party
MNT	Mongolian National Tugrik
Mom	Minutes of Meeting
NIPA	National Industry Promotion Agency
NPV	Nep Present Value
LA	Legislation & Regulation Analysis
LOI	Letter of intent
LBS	Location Based Service
ODA	Official Development Assistance
OGC	Open Geo-spatial Consortium
OS	Operating System
PC	Personal Computer
R&R	Roles and Responsibilities
SMG	Seoul Metropolitan Government
SDW	Spatial Data Warehouse

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S/W	Soft Ware
SWOT	Strength, Weakness, Opportunities, Threats
TA	Technical Analysis
TFT	Task Force Team
USD	US dollars
UNDP	United Nations Development Program
WB	World Bank
WeGO	World e-Government Organization

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Executive Summary

As the final report for the feasibility study on Smart Citizen Service HUB(AIO) with smart card –in terms of citizen`s service satisfaction- of Buenos Aires city government, this project has been supervised by WeGO and collaborated with World Bank. This project, so called the informatization feasibility study, has been conducted focusing on providing efficient and transparent public civil service for one-stop civil service and creating additional benefits. Moreover it is promoted to improve the civil service, especially in the socially vulnerable sector in Buenos Aires.

The final report consists of environmental analysis, technical description, and legal analysis, including organization structure related to this project item.

Furthermore, through the analysis of financial capability and possibility, the final report has provided a more specific feasibility such as NPV, IRR based on estimated cash flow.

Through the first and second site investigation, issues of Buenos Aires city and To Be model have been addressed and shared with Buenos Aires city government. In order to design To-Be model, the implementation plan was established and then the final report in Buenos Aires was conducted on Jan. 2013.

The current level of e-government implementation of Buenos Aires lies between integration and innovation phases. They have their own Information technology agency with function of application, system integration, and infrastructure, which belong to the city government.

Thus, the city government of Buenos Aires is considering more innovative IT public service such as ‘Better Administration,’ ‘Efficient Human (Officials) Resource Management,’ ‘Open Government,’ and ‘Smart City’ as well. Even, Buenos Aires city government has opened a new ministry named Ministry of Modernization by city major.

They pursue benefits not only for the socially vulnerable sector but also for various sectors such as transportation, culture, medical service with Smart Citizen Service HUB (AIO) with smart card. Therefore, this target project is regarded as one of the most important e-Government items for its sustainable development in public sector and private sector as well.

So, this project can be a highly important step in achieving an open government, better administration and even smart city.

As a consequence, the feasibility study project team will analyze current situation and introduce best practice of other cities in the final report. Also, it will provide recommendations on the right direction for this project.

I. Overview

1. Introduction

The capital city of Argentina, Buenos Aires has grown as economic, cultural, social hub of Argentinian and Latine America.

As a leading munal government in Latin America, the city government of Buenos Aires is planning to start better concept for improving public service to every citizens.

The main conceptual idea is using smart card framework in order to achieve this mission. So, following feasibility study is focused on the establishment of systemized urban development and the provision of various recommendations to build the project.

2. Project Background

The role of city government has strengthened in recent years. Urbanization is an indispensable trend in modern times. The population in urban areas has steadily increased, particularly in developing countries. By 2025, it is projected that about two-thirds of the global population will live in urban areas, with the urban population expected to reach 5 billion in 2030. Meanwhile, the urbanization of developing countries has been proceeding more and more rapidly.

However, many cities in developing countries have limitations in terms of their capacity for urbanization due to a lack of infrastructure, a lack of vision, limited financial resources, etc.

To address these various limitations, the establishment of e-Government is another solution.

Thus, City government requires the adoption of an advanced e-Government model with the object of efficient and sustainable city development to address the problems caused by a lack of systematic urbanization.

SMG is one of the most advanced city governments in terms of e-Government. Since 1990, SMG has built on its e-Government knowledge and operational expertise in various areas to develop cities where e-Government is fully implemented. Also, as president city of WeGO, SMG has a strong interest in the spread of e-Government, and has been making efforts to build an inter-city cooperation model. As part of this effort, SMG is opening a project F/S project called “Feasibility Study for overseas cities e-Government Application” for three city governments.

According to LOI from the city government of Buenos Aires, the city created a new ministry to respond to the necessities of bringing better and more modern services to its citizens. This ministry, the Ministry of Modernization, is working to develop programs which use new technology in order to establish advanced e-Government for the city of Buenos Aires.

Furthermore, as part of intercity cooperation, mayor of SMG recently visited Buenos Aires to make better friendship between two cities in June, 2012. When the SMG mayor visited, both

cities had undersigned friendship cooperation MOU and discussed future cooperation in various areas with SMG`s experiences and operational know-how in e-Government sector.

To address the needs of Buenos Aires city government, the city would like to join in the project named “Development of an e-Government toolkit for cities in developing countries: a joint project of WeGO and the World Bank.”

As a part of global co-prosperity, both city governments are exploring ways to optimize their cooperation. SMG, on the basis of its experience of building e-Government, is willing to deliver its successful expertise to BA.

The city government of Buenos Aires has established new ministry for modernization in 2011. The missions of modernization ministry are ‘better administration’, ‘Open government’ and ‘Smart city’. Thus, BA has decided to cover Smart transportation with this F/S project. Additionally, World Bank country office in Argentina also agrees Smart Card system for Buenos Aires citizens.

With this F/S project, FSCT will investigate relevant issues for smart card system, such as master plan, policy, law and existing infrastructure during the F/S project period

3. Project Objectives

The key objectives of this project can be summarized as follows:

- Feasibility study on Spatial Data Infrastructure in terms of SDI for underground facilities such as networks, pipelines and electricity in urban area.
- Report concept : Practical, Creative, Effective immediately and Sustainable
- Objective study utilizing best practices and survey for e-Government environments
- Derive a practical benefit(s) from e-Government for city government and the citizen

- Proposed development of future e-Government model
- Development of To-Be Model according to requirement(s)
- Creation of an e-Government roadmap suitable for target item(s)

- Promote e-Government best practices to WeGO members
- Case study on e-Government implementation by Seoul Metropolitan Government
- Presentation about e-Government at the second General Assembly 2012, in Spain (November/2012)

- Cooperation with World Bank Toolkit Project
- Improving executive ability and reliability of World Bank Toolkit through output generated in this project

4. Project Scope

- Requirement Analysis and Preliminary Study
- Detailed analysis of requirement(s)

- Analysis of problem(s) currently faced
- Survey of applicable model based on secondary data
- Preparation of pre-interview questionnaire and others
- Research and site survey
 - Undertake onsite kick-off meeting and review the inception report
 - Conduct interviews and collect primary data for analysis (See ‘Table 4-1’ below)
 - Field trip (if necessary)
 - Report the initial result(s) of onsite investigation

Table I-1 Investigation & analysis items

Category	Descriptions
EA (Environmental Analysis)	Overview Overall policies and strategies Stakeholders analysis Constraints and issues to address
TA (Technical Analysis)	Current ICT status ICT situation & request for the project Technical design & approach
LA (Legislation & Regulation Analysis)	Legal & regulatory analysis Institutional analysis Suggestions regarding the legal, regulatory & institutional framework for the project
RC (Recommendations)	Project overview & components Priority of the projects Budget planning Schedule Monitoring & evaluation
FA (Feasibility Assessment & Economic Analysis)	Demand analysis Project rationale Valuation of benefits & costs Monitoring & Evaluation Linkages to World Bank Toolkit Development Project

- Establishment of strategy
 - Vision and goal setting
 - Development of the informatization strategy in detail for e-Government
 - Calculation of benefits by scenario (If necessary)
 - R&R¹ setting by each organizer and other stakeholders
 - Briefing implementation plan
 - Budgeting plan (if necessary)
- Consensus and Future planning
 - Reach a consensus during (or after) the release of an Interim report
 - Reconfiguration of the strategy, or modification of the strategy (if necessary)
 - After mutual consensus, plan as detailed an implementation as possible
 - Reporting, Final
- Other

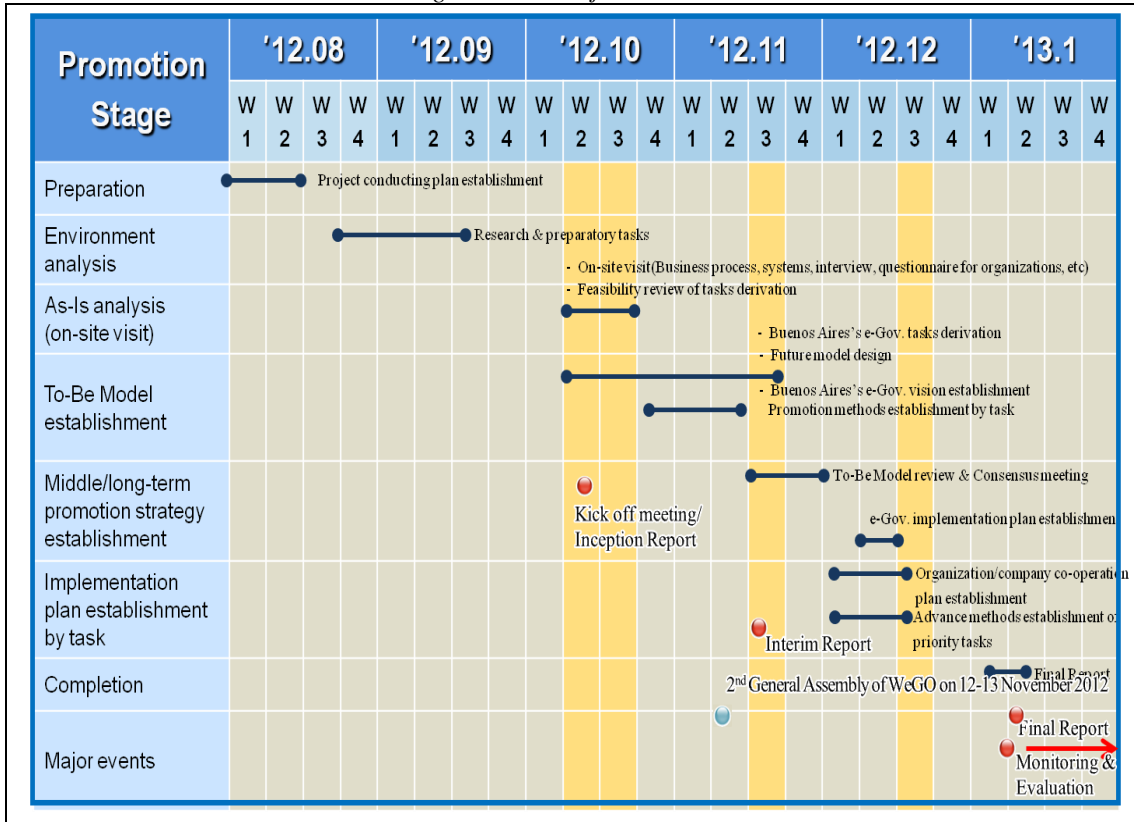
¹ R&R: Roles and Responsibilities

- Cooperation with World Bank Toolkit Project team

5. Project Schedule

Project timescales will be no more than (five) months, commencing in August 2012. This is the extensive project schedule, and the overall schedule of the F/S project is as follows:

Figure I-1 Project schedule



6. Project Organization

The project is initially organized by both SMG and BA, as follows:

Table I-2 Project organization

Seoul Metropolitan Government (SMG)		Buenos Aires City Government (BA)	
Title	Name	Title	Name
Senior officer	Ms. Sun-Mi Kang	Chief	Mr. R. Martinez
Officer	Ms. Jung-Ah Kim	Project coordinator	Miss. Ana Ciuti
Officer	Ms. Sun-young Jung	To be confirmed	To be confirmed

Seoul Metropolitan Government FSCT			
Title	Name	E-mail	Area of expertise

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Senior Consultant	Miss. Tae-Hyee KIM	consulting @h	IT consultant, IT analysis specialist (7)
Senior Consultant	Mr. Jae Bum KIM	consulting @h	IT consultant (8)
Director(IT specialist)	Mr. Jin Suk LEE	consulting @h	IT specialist, e-Gov. (10)

Classification	Activities
City Government of Buenos Aires	Planning & Coordination Project Execution
Roles & Responsibilities	
F/S project coordination Offer of Buenos Aires `s ICT current status information Identification of the project scope Project execution	

- Project Roles and Responsibilities

Table I-3 Project role and responsibilities

Classification	Activities
FSCT	Project Management Project Consulting
Roles & Responsibilities	
Project management (i.e., scope, schedule, etc.) Review of project deliverables Project monitoring	

² @h: hyundai-uni.com

³ (number) years of experience

II. Environmental Analysis (EA)

1. Overview

1.1 Overview of Argentina

Environmental Analysis (EA) aims to look into Buenos Aires city’s general environment to make better understanding of current status in Buenos Aires through the research to collect and analyze geographical, political, economical, and socio-cultural information.

1.1.1 Overview

Argentina, officially the Argentine Republic, is a country in South America, bordered by Chile to the west and south, Bolivia and Paraguay to the north, and Brazil and Uruguay to the northeast. Argentina claims sovereignty over part of Antarctica, the Falkland Islands and South Georgia and the South Sandwich Islands.

The country is a federation of 23 provinces and the autonomous city of Buenos Aires, its capital and largest city. It is the eighth-largest country in the world by land area and the largest among Spanish-speaking nations. Argentina is a founding member of the United Nations, Mercosur, the Union of South American Nations, the Organization of Ibero-American States, the World Bank Group and the World Trade Organization, and is one of the G-15 and G-20 major economies.

A recognized regional power, and middle power, Argentina is Latin America's third-largest economy, with a "very high" rating on the Human development index. Within Latin America, Argentina has the fifth highest nominal GDP per capita and the highest in purchasing power terms. Analysts have argued that the country has a "foundation for future growth due to its market size, levels of foreign direct investment, and percentage of high-tech exports as share of total manufactured goods", and it is classed by investors as middle emerging economy.

Table II-1 Argentina country overview

General	
Location	Southern South America, bordering the South Atlantic Ocean, between Chile and Uruguay
Area	total: 2,780,400 sq km, land: 2,736,690 sq km, water: 43,710 sq km
Climate	mostly temperate; arid in southeast; sub-Antarctic in southwest
Population	42,192,494 (July 2012 est.)
Capital	Buenos Aires
Ethnic groups	white (mostly Spanish and Italian) 97%, mestizo (mixed white and Amerindian ancestry), Amerindian, or other non-white groups 3%
Languages	Spanish (official), Italian, English, German, French, indigenous (Mapudungun, Quechua)
Religions	nominally Roman Catholic 92% (less than 20% practicing), Protestant 2%, Jewish 2%, other 4%
Politics	
Independenc	9 July 1816 (from Spain)

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Government type	republic
Chief of state	President Cristina FERNANDEZ DE KIRCHNER (since 10 December 2007)
Legislative branch	bicameral National Congress or Congreso Nacional consists of the Senate (72 seats; members are elected by direct vote; presently one-third of the members elected every two years to serve six-year terms) and the Chamber of Deputies (257 seats; members are elected by direct vote; one-half of the members elected every two years to serve four-year terms)
Political parties and leader	Broad Progressive Front or FAP [Hermes BINNER]; Civic Coalition or CC (a broad coalition loosely affiliated with Elisa CARRIO); Dissident Peronists (PJ Disidente) or Federal Peronism (a sector of the Justicialist Party opposed to the Kirchners); Front for Victory or FpV (a broad coalition, including elements of the PJ, UCR, and numerous provincial parties) [Cristina FERNANDEZ DE KIRCHNER]; Justicialist Party or PJ [vacant]; Radical Civic Union or UCR [Mario BARLETTA]; Republican Proposal or PRO [Mauricio MACRI]; Socialist Party or PS [Ruben GIUSTINIANI]; numerous provincial parties
International Organization participation	AfDB (nonregional member), Australia Group, BCIE, BIS, CAN (associate), CELAC, FAO, FATF, G-15, G-20, G-24, G-77, IADB, IAEA, IBRD, ICAO, ICC, ICRM, IDA, IFAD, IFC, IFRCS, IHO, ILO, IMF, IMO, IMSO, Interpol, IOC, IOM, IPU, ISO, ITSO, ITU, ITUC, LAES, LAIA, Mercosur, MIGA, MINURSO, MINUSTAH, NAM (observer), NSG, OAS, OPANAL, OPCW, Paris Club (associate), PCA, SICA (observer), UN, UNASUR, UNCTAD, UNESCO, UNFICYP, UNHCR, UNIDO, Union Latina (observer), UNTSO, UNWTO, UPU, WCO, WFTU, WHO, WIPO, WMO, WTO, ZC
Economy	
GDP (PPP)	\$725.6 billion (2011 est.)
GDP per capital	17,700 (2011 est.)
GDP growth rate	8.9% (2011 est.)
Currency	Argentine pesos (ARS)
Fiscal year	Calendar year (1. 1. ~ 12. 31.)
Main Industry	food processing, motor vehicles, consumer durables, textiles, chemicals and petrochemicals, printing, metallurgy, steel
Exports commodities	soybeans and derivatives, petroleum and gas, vehicles, corn, wheat
Imports commodities	machinery, motor vehicles, petroleum and natural gas, organic chemicals, plastics
Natural Resources	fertile plains of the pampas, lead, zinc, tin, copper, iron ore, manganese, petroleum, uranium

*Source: CIA, World fact book (<https://www.cia.gov/library/publications/the-world-factbook/geos/ar.html>)

1.1.2 Geography

1.1.2.1 Area/Location

Argentina is situated in southern South America, with the Andes on the west and the South Atlantic Ocean to the east and south. Argentina has a total surface area (excluding the Antarctic claim and areas controlled by the United Kingdom) of 2,780,400 km²; of this, 43,710 km², or 1.57%, is water. Argentina has six main regions. The Pampas are fertile lowlands located in the center and east. The Mesopotamia is a low land enclosed by the Paraná and Uruguay rivers, and the Gran Chaco is between the Mesopotamia and the Andes. Cuyo is at the east side of the Andes, and the Argentine Northwest is at the North of it. The Patagonia is a large plateau to the south.

Figure II-1 Argentina Map



*Source: Google map (<http://maps.google.co.uk>)

1.1.2.2 Topography

The highest point above sea level is in the Mendoza province at Cerro Aconcagua (6,959 m (22,831 ft)), also the highest point in the Southern and Western Hemisphere. The lowest point is Laguna del Carbón in Santa Cruz province, -105 m (-344 ft) below sea level. This is also the lowest point in South America.

The easternmost continental point is northeast of Bernardo de Irigoyen, Misiones, and the westernmost in the Perito Moreno National Park in Santa Cruz province. The northernmost point is at the confluence of the Grande de San Juan and Mojinete rivers in Jujuy province, and the southernmost is Cape San Pío in Tierra del Fuego.

1.1.2.3 Climate

The generally temperate climate ranges from subtropical in the north to subpolar in the far south. The north is characterized by very hot, humid summers with mild drier winters, and is subject to periodic droughts. Central Argentina has a temperate climate, with hot summers with thunderstorms, and cool winters, and higher moisture at the east. The southern regions have warm summers and cold winters with heavy snowfall, especially in mountainous zones.

1.1.2.4 Natural Resources

Argentina has abundant resources, such as fertile plains of the pampas, lead, zinc, tin, copper, iron ore, manganese, petroleum, uranium, etc.

1.1.3 Society

1.1.3.1 Population and Ethnicity

According to CIA world fact book in 2012, estimated population in Argentina is 42,192,4947 (2012 EST.). The country comparison of population to the world ranked 32 within 239 countries. Population growth rate is 0.997% which ranked 119 among the world (2012 EST.).

In the case of ethnicity, ethnic groups are composed of 97% of white (mostly Spanish and Italian), 3% of mestizo (mixed white and Amerindian ancestry), Amerindian, or other non-white groups.

1.1.3.2 Languages and Religions

The official language in Argentina is Spanish. However, some part of Argentina uses Italian, English, German, French, indigenous (Mapudungun, Quechua).

In the case of religion, religions are composed of Roman Catholic (92%), Protestant (2%), Jewish (2%), the others (2%) accordance with the CIA world fact book.

1.1.3.3 Politics form and Standard

Argentina is a constitutional republic and representative democracy. The government is regulated by a system of checks and balances defined by the Constitution of Argentina, which serves as the country's supreme legal document. The seat of government is the city of Buenos Aires; such location is regulated by the Congress. Suffrage is universal, equal, secret and mandatory.

The Chamber of Deputies has 257 voting members, each representing a province for a four-year term. Seats are apportioned among the provinces by population every tenth year. As of 2012, ten provinces have just five deputies, while the Buenos Aires Province, the most populous province, has 70. The Senate has 72 members with each province having three senators, elected for six-year terms at-large; one third of Senate seats are up for election every other year. One third of the candidates presented by the parties must be women. The president serves a four-year term and may be elected to the office no more than twice in a row. The president is elected by direct vote. The judiciary is independent of the executive and the legislature. The Supreme Court has seven members appointed by the President in consultation with the Senate. The judges of all the other courts are appointed by the Council of Magistrates of the Nation, a secretariat composed of representatives of judges, lawyers, the Congress and the executive.

1.1.4 Economy

Argentina benefits from rich natural resources, a highly literate population, an export-oriented agricultural sector, and a diversified industrial base. Although one of the world's wealthiest countries 100 years ago, Argentina suffered during most of the 20th century from recurring economic crises, persistent fiscal and current account deficits, high inflation, mounting external debt, and capital flight. A severe depression, growing public and external indebtedness, and a bank run culminated in 2001 in the most serious economic, social, and political crisis in the country's turbulent history. Interim President Adolfo RODRIGUEZ SAA declared a default - the largest in history - on the government's foreign debt in December of that year, and abruptly resigned only a few days after taking office. His successor, Eduardo DUHALDE, announced an end to the peso's decade-long 1-to-1 peg to the US dollar in early 2002. The economy bottomed out that year, with real GDP 18% smaller than in 1998 and almost 60% of Argentines under the poverty line. Real GDP rebounded to grow by an average 8.5% annually over the subsequent six years, taking advantage of previously idled industrial capacity and labor, an audacious debt restructuring and reduced debt burden, excellent international financial conditions, and expansionary monetary and fiscal policies. Inflation also increased, however, during the administration of President Nestor KIRCHNER, which responded with price restraints on businesses, as well as export taxes and restraints, and beginning in early 2007, with understating inflation data. Cristina FERNANDEZ DE KIRCHNER succeeded her husband as President in late 2007, and the rapid economic growth of previous years began to slow sharply the following year as government policies held back exports and the world economy fell into recession. The economy has rebounded strongly from the 2009 recession, but the government's continued reliance on expansionary fiscal and monetary policies risks exacerbating already existing high inflation.

1.2 Overview of Buenos Aires

1.2.1 Overview

Buenos Aires is the capital and largest city of Argentina, and the second-largest metropolitan area in South America, after Greater São Paulo. It is located on the western shore of the estuary of the Río de la Plata, on the southeastern coast of the South American continent. Greater Buenos Aires conurbation, which also includes several Buenos Aires Province districts, constitutes the third-largest conurbation in Latin America, with a population of around thirteen million.

Buenos Aires is rated one of the 20 largest cities in the world. Along with São Paulo and Mexico City, it is one of the three Latin American cities alpha categories for the study GaWC5 and has been ranked as the most important global city and competitive marketplace of Latin America. Buenos Aires has the best quality of life in Latin America, ranked at 61 in the world and its per capital income is among the three highest in the region.

It is the most visited city in South America, and most important, largest and most populous of South American capitals as well as the Latin American Documentary "United by History," the Paris of South America. People from Buenos Aires are referred to as porteños (people of the port).

Buenos Aires is a top tourist destination, and is known for its European style architecture and rich cultural life, with the highest concentration of theatres in the world.

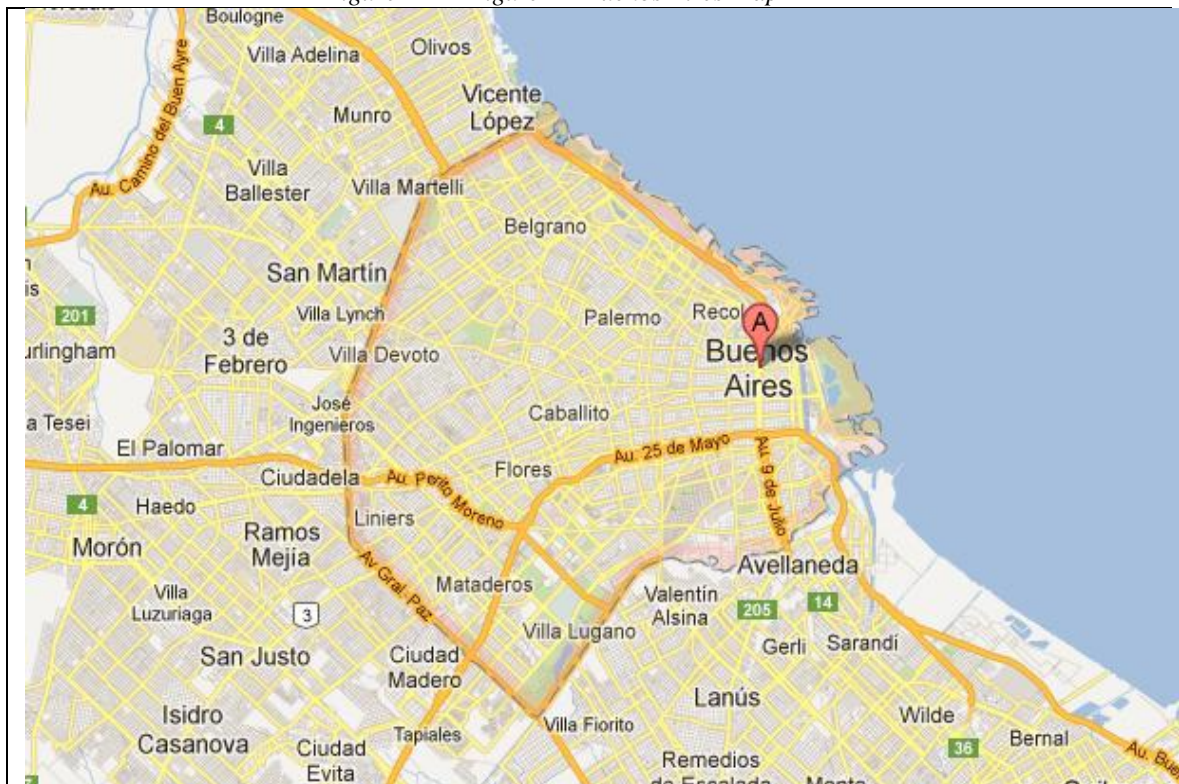
Buenos Aires is currently bidding to host the 2018 Summer Youth Olympics.

1.2.2 Geography

1.2.2.1 Area/Location

The limits of Buenos Aires proper are determined in the eastern part and north-east by the Rio de la Plata, in the southern part and southeast by the Riachuelo and to the northwest, west and Southwest by Avenida General Paz, a 24 km (15 mi) long highway that separates the province of Buenos Aires from the city.

Figure II-2 Figure I-2 Buenos Aires Map



*Source: Google map (<http://maps.google.co.uk>)

1.2.2.1 Climate

Buenos Aires has a humid subtropical climate with humid summers and mild winters. The warmest month is January, with a daily average of 25.1 °C (77.2 °F). Most days have temperatures between 28 to 31 °C (82 to 88 °F) and nights between 16 to 21 °C (61 to 70 °F). Heat waves from Brazil can push temperatures above 35 °C (95 °F), yet the city is subject to cold fronts that bring short periods of pleasant weather and crisp nights. Relative humidity is 64–70% in the summer, so the heat index is higher than the true air temperature. The highest temperature ever recorded was 43.3 °C (110 °F) on 29 January 1957. Spring (September to November) and autumn (March to May) are generally mild and volatile, with averages temperatures of around 17 °C (63 °F) and frequent thunderstorms, especially during the spring.

Winters are temperate, though suburban areas often experience frost from May to September, as opposed to downtown Buenos Aires, which experiences the phenomenon only several times per season. Relative humidity averages in the upper 70%, which means the city is noted for its moderate to heavy fogs during autumn and winter. July is the coolest month, with an average temperature of 10.9 °C (51.6 °F).

1.2.3 Society

1.2.3.1 Population

According to 2010 census, estimated population in Buenos Aires is 2,891,082. Population density is 14,312 per km²; and of the total population, 23.5% is minors, 54% is the middle-aged and 22.4% is seniors. Among 1, 600,000 of economically active people, about 100,000 people, which account for 6% of the total economically active, are currently unemployed.

1.2.3.2 Language

The official language in Argentina is Spanish. However, some parts of Argentina use Italian, English, German, French, and indigenous (Mapudungun, Quechua)

1.2.3.3 Administration of Buenos Aires City

The Executive is held by the Chief of Government elected for a four-year term together with a Deputy Chief of Government, who presides over the 60-member Buenos Aires City Legislature. Each member of the Legislature is elected for a four-year term; half of the legislature is renewed every two years. Elections use the D'Hondt method of proportional representation. The Judicial branch is composed of the Supreme Court of Justice (Tribunal Superior de Justicia), the Magistrate's Council (Consejo de la Magistratura), the Public Ministry, and other City Courts.

1.2.4 Economy

Buenos Aires is the political, financial, industrial, commercial, and cultural hub of Argentina. Its port is one of the busiest in South America; navigable rivers by way of the Rio de la Plata connect the port to north-east Argentina, Brazil, Uruguay and Paraguay. As a result it serves as the distribution hub for a vast area of the south-eastern region of the continent. Tax collection related to the port caused many political problems in the past.

The economy in the city alone, measured by Gross Geographic Product (adjusted for purchasing power), totaled US\$ 84.7 billion (US\$ 34,200 per capita) in 2011 and amounted to nearly a quarter of Argentina's as a whole. Metro Buenos Aires, according to one well-quoted study, constitutes the 13th largest economy among the world's cities. The Buenos Aires Human Development Index (0.923 in 1998) is likewise high by international standards.

2. Policies and Strategies

2.1 National Policies and Strategies

2.1.1 National Development Plan

As specific projects, recently this year, Argentine President, Cristina Fernández, has presented the “Strategic Industrial Plan 2020” which is aimed at reducing imports by 45%, increasing production in ten key sectors and reducing the unemployment rate to 5%. The Plan was conceived together with the Economic Commission for Latin America and the Caribbean (ECLAC) and included the footwear, leather goods, textiles and apparel sectors.

When presenting the Plan, President Fernández called for an end to the dichotomy between the production of primary goods and industry and exhorted industrialist to follow the Plan aimed at “giving higher added value to our production and to complete the links in the chain of various sectors” looking for sustained growth.

The Plan foresees reaching 2020 with an average GDP growth of 5% but with industrial production running at an average of 7% per year. Exports should increase from US\$68.5 billion in 2010 to US\$136 billion in 2020, while imports will fall from US\$56.44 billion to US\$110.37 billion. In this way the trade balance will double from US\$12.06 billion to US\$26.63 billion.

One of the objectives of the Plan is to lift the GDP to US\$580.71 billion from the US\$356.51 billion achieved in 2010 so that per capita GDP reached US\$12,900 from the current US\$8,700. In this context the unemployment rate which was 7.3% in 2010 could decline to 5% by the end of 2020.

The Plan is based on a process of import substitution of some 45% and thus “defend the internal market” by increasing exports. In addition productive investments will be maintained by increasing credit facilities with policies of support adapted for each sector accompanied by more technology and more regional integration.

The sectors included in the Plan are: footwear, leather goods, textiles and apparel; food; chemical and petrochemical products; wood; paper and furniture; materials and construction; capital goods; agricultural machinery; automobiles and spare parts; medicines and software.

These sectors account for 80% of the GDP and more than 60% of industrial employment, according to the Argentine Ministry of Industry.

President Fernández called for “entrepreneurs, workers, academics, bankers and investors from all the provinces of the country” to integrate ten forums to analyze the productive sectors with the aim of having a participatory and federal debate on industrial policy for the coming ten years. The first meetings will take place on March 29th and cover the footwear and leather goods production chain; on April 12th it will be the turn of automobiles and spare parts and on April 26th the medicines sector.

President Fernández also explained that the forums will work in accordance with five main axes: the situation of national production, the substitution of imports and the increase of exports; the incorporation of science and technology as well as innovation; the consolidation in local value chains; the insertion of small and medium businesses in the production chain to promote growth; integration both global and regional.

The slogan of the Argentine Strategic industrial Plan 2020 is: “Thinking today in the industry of tomorrow.” ECLAC will take part as an external consultant in the parameters of the Plan.

2.1.2 National ICT policies and Strategies

The Argentinean Government’s S&T competencies lie at the federal and provincial levels, with the main policy making, management, and promotion and coordination entities around the National government. The most relevant one is the Ministry of Science, Technology and Productive Innovation (MINCyT). The National Congress, the House of Senators and the House of Representatives have S&T commissions, whose role are to assess the performance of the sector and to promote the legislative actions deemed necessary for its development. At the level of the provinces, some governments have agencies for the promotion and coordination of S&T activities, such as the S&T Ministry of the Province of Cordoba, or the Scientific Research Commission of the Buenos Aires Province (CIC). The main policies and national strategies for ICT development in Argentina depend on these two structures.

Upgrading the Secretary of Science and Technology (SECyT), in 2007, at the ministry level (MINCyT) shows the recognition of the key role of RTDI for achieving a prosperous, equitable society, being the only one of its kind in Latin America that includes Productive Innovation associated with Science and Technology. In order to contribute to meet the priorities of economic and social objectives, MINCyT’s clear policy is to position Argentina in the high-value added segment of the global economy, and thus to invest heavily into developing its S&T system while at the same time connecting it more strongly to productive and service sectors, under the paradigm of knowledge as the axis of development. Regarding those sectors, innovation support is tilting the balance from stimulating enterprises to engage in innovative activities at all, to encouraging them to cumulative and interactive learning and innovative processes tightly linked to their ability to increase competitiveness and market shares.

The core lines of Argentinean policies are based on promoting the growth of National Science, Technology and Innovation by increasing the salaries of researchers and the provision of infrastructure, actions aimed at linking the academic and productive systems to generate public - private partnerships; the bridging of the gap existing between the big cities and the interior of the country through credit lines granted by the Federal Council for Science and Technology

(COFECYT)⁴ whose priorities -closely addressed to regional needs- were set by the provincial authorities.

MINCYT aims to offer concrete solutions to the challenges of the society, promoting a productive initiative that ties what researchers produce to the market and the social needs. With this objective, MINCYT develops sectorial programs to promote the public-private association to solve, through strategic planning, technology inequalities in high-priority sectors such as health, agro-industry, social development, energy and environment. In order to obtain significant contributions from science and the technology to these areas, the Argentinean scientific and technology policy is focused on three technological platforms that cross the problematic before mentioned: Biotechnology, Nanotecnología and ICT.

In the following paragraphs, the most recent official documents that guide Argentinean policies in ST&I are considered, in particular those that have relation to the ICT sector. Two of them, the White Book and the National Digital Agenda, are presented in detail due to their validity and use.

One of the ICT public policy foundations in Argentina is the Law of Science, Technology and Innovation (N° 25.467/01) which establishes the following issues:

- the National System of Science, Technology and Innovation
- the objectives of the national scientific and technological policy
- the responsibilities of the National State in ST&I
- the structure and planning of the National System of ST&I
- the definition of funding schemes of the R&D activities and their evaluation

In 2005, the former SECyT, the part of the Ministry of Education (ME)⁵, and the related Observatory, developed the “Bases for a ST&I Strategic Plan 2005-2015” containing the core guidelines for the policies and planning of these activities. They include a series of strategic objectives and goals:

- Increasing consistency and social equality, aim RTD towards the improvement of quality of life and social development.
- Promoting sustainable development, adopt environment-friendly technologies for the exploitation of natural resources and the improvement in the related techniques.
- Moving towards a new productive specialization profile, with further incorporation of knowledge.
- Fostering access to a knowledge-based society and economy, increase public and especially private RTDI investment, and the number of researchers and technologists.

In 2006, the “Strategic Plan on Science, Technology and Innovation "Bicentenario" (2006-2010)” was launched. This Plan takes some inspiration, e.g. from European foresight studies and projections, and has four major components and foci: Global scenarios; Agro-Food; Industrial Sector; and Higher Education.

Articulated with MINCyT, the National Agency for S&T Promotion, "La Agencia" (ANPCyT)⁶ is a major funding agency concentrating the implementation of S&T research, and innovation instruments, with the following main programmers:

- FONCyT (Fondo para la Investigacion Cientifica y Tecnologica) supports projects and activities that generate new scientific and technological knowledge carried out by researchers from public and private institutions located in the country.
- FONTAR (Fondo Tecnologico Argentino) manages funding from different origin, public and private to help innovative technological entrepreneurs.
- FONSOFT (Fondo Fiduciario de Promoción de la Industria del Software) is a software industry trust fund that aims at boosting the strengthening of software-related activities nationwide.
- FONARSEC (Fondo Argentino Sectorial) aims to improve the sector competitiveness, offering solutions to the identified problems and giving answers to the community supporting projects and activities to develop capacities in areas of high potential impact and with a permanent transfer to the productive sector.

2.2 Buenos Aires Policies and Strategies

2.2.1 Buenos Aires Vision 2016

The actual modernization process of the City of Buenos Aires is based on the following premises:

- Strengthen the relationship between State and citizens through substantial improvement in the provided services.
- Lubricate citizens as the main objectives of the reform, considering them in their various roles: user, beneficiary, contributor.
- Improve the quality of the spending, ensuring closer links between the resources employed and the results.
- Include the participation of the government agents and the civil society organizations in the process.

It is intended the profundization of this process considering that the modernization of the State must be accompanied by a reform of the management models of organizations as to adapt the size and structure of the state apparatus to institutional missions, government politics and available resources.

It is intended to advance in refunding jerarquies, both political and technical.

The profundization of the modernization process of the State should strengthen the already advanced use of technology and e-government as a component and a necessary support. Deepening the Modernization technology program of the administrative process, it has an objective to fortify, which are the four desired characteristics of the political and administrative management of the City: close, personalized, transparent and able to meet the new paradigms. And these characteristics are what information society imposes in order to achieve an

administration that enables networked electronic relations with citizens, to access City services without time and space barriers, to provide integral information, to position citizens as the centre of the administrative activity, to encourage participation of the residents in the home, query, access and interaction of services, and to provide quality services to citizens.

2.2.2 Master plan 2016

- Ministry of Modernization

The Ministry of Modernization of the city of Buenos Aires was created in response to the need to provide better everyday services to citizens, to ensure transparency by providing information in real time, to professionalize and promote the culture of knowledge to personnel, and to optimize the allocation of resources for maximum efficiency and quality.

In the first stage of Government Management, efforts were focused on solving urgent and neglected necessities, such as a social security programs, building infrastructure for schools, health and safety.

Also implemented were the first steps towards promoting cultural change in the organization, starting a survey and designing new processes, incorporating technology into a project-based plan to modernize the city of Buenos Aires.

3. ICT Environmental Analysis related to the Project

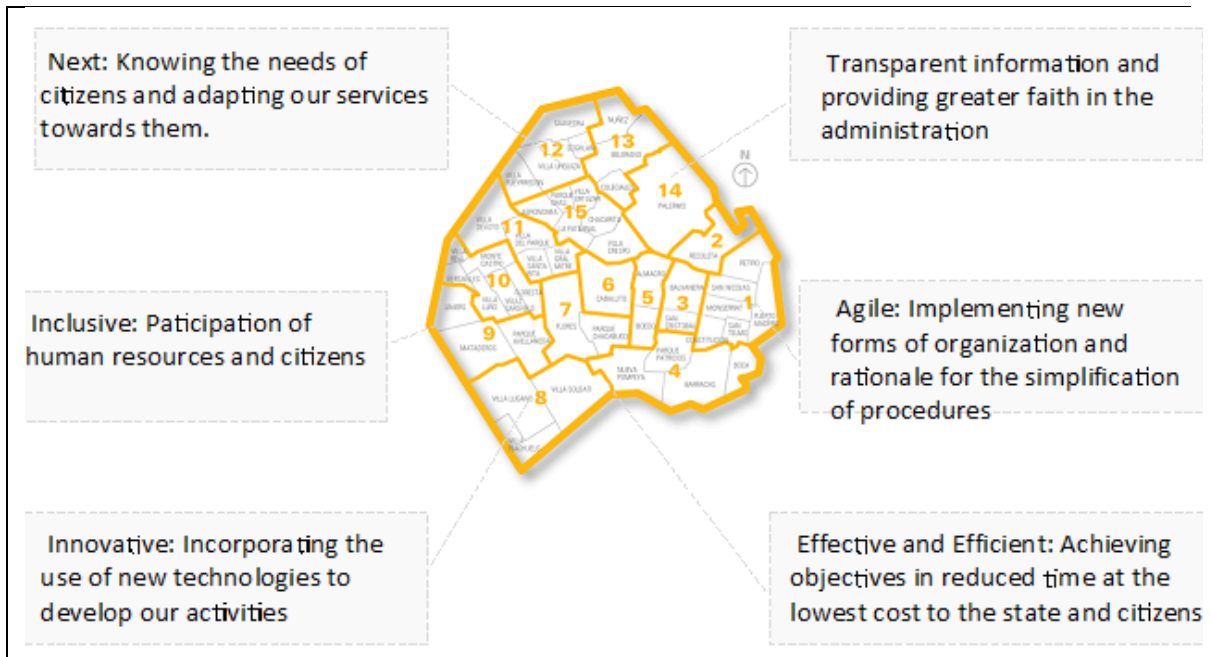
3.1 Buenos Aires ICT Policies and Strategies

Buenos Aires ICT Policies and Strategies are to be recognized for delivering governance that provides quality services in a simple, efficient and modern form according to the expectations of citizens and employees. The mission of Buenos Aires ICT policies is to establish a modern administration. Modernization means moving towards the use of new technologies, in sustainable forms over time, as a means to:

- Increase the speed and transparency of management
- Improve processes for a more efficient organization
- Provide better services and quality care for citizens (according to their expectations)
- Provide more information, generating new opportunities for collaboration and participation

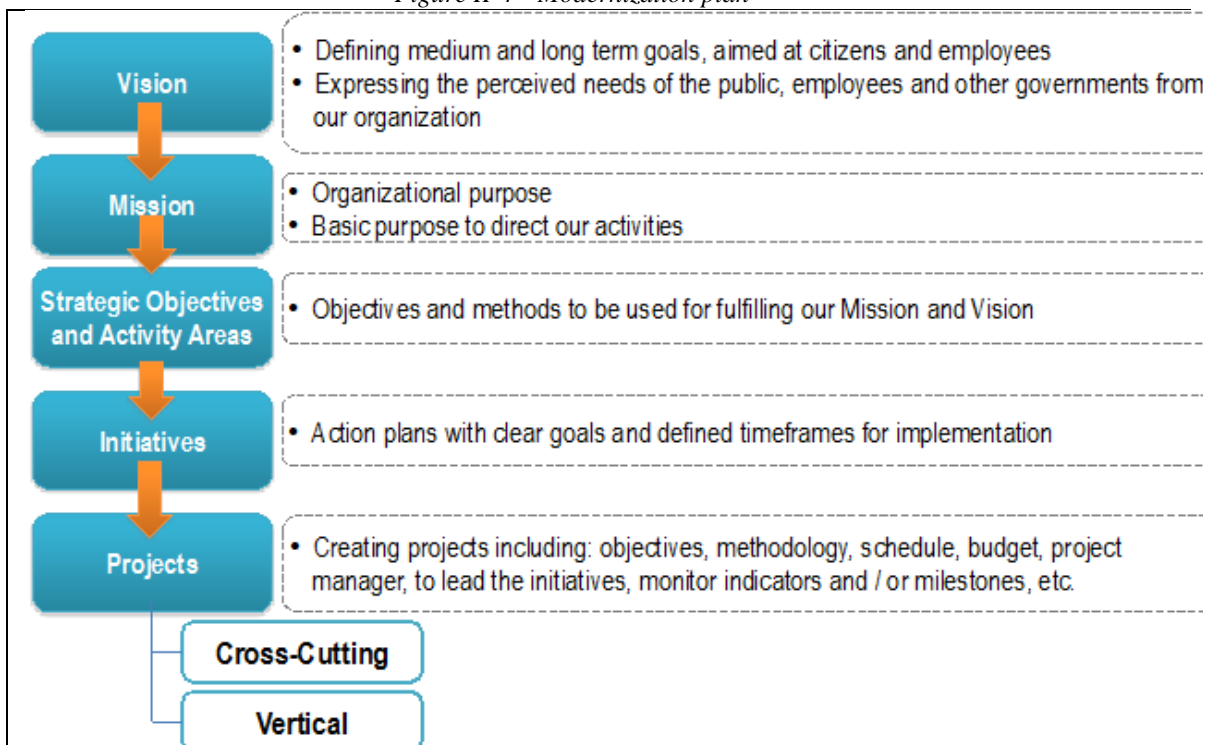
The following is the key concept as to Buenos Aires ICT Policies and Strategies.

Figure II-3 Buenos Aires ICT policies and strategies



To establish ICT Policies and Strategies of Buenos Aires, The Ministry of Modernization of the city of Buenos Aires has framework for the modernization plan.

Figure II-4 Modernization plan



3.1.1 Major objectives of E-Buenos Aires Program

Buenos Aires is one of the most important cities in Argentina and Latin America with programs and policies oriented to have a government with more transparency, efficiency and quickness.

At the beginning of 2012, the Government of Buenos Aires decided to create a new area, “the Ministry of Modernization” for responding to the necessity of bringing a better service to its citizens and providing up-to-date information that is easily accessible.

Major objectives of E-Buenos Aires Program for Modernization of the city are based on four chapters.

Table II-2 Buenos Aires modernization programmes

<p>Better administration</p> <ul style="list-style-type: none"> • <i>Provide the government with new technological processes such as that allows more efficiency and quality of services</i>
<p>The use of information</p> <ul style="list-style-type: none"> • <i>The use of information in order to consolidate and position an open government</i>
<p>Human Capital</p> <ul style="list-style-type: none"> • <i>Better manage of human resources in a way which improves employment competency and efficiency</i>
<p>Smart City</p> <ul style="list-style-type: none"> • <i>Develop policies to create a smart city with a sustainable use of technologies</i>

3.2 Buenos Aires ICT Project plan related to the AIO Project

A variety of activities for Buenos Aires ICT project plan are planned in 2012 in terms of human capital, administrative improvement, intelligent city and information to citizens.

Human Capital is for improving human resources management and providing city employees with a model of modern government that is the closet to the citizens. Major projects in human capital are as below.

Table II-3 Major projects of human capital

Sector	Name of Project	Remark
Young Professionals	Pay Adjustment Higher Authorities	
	Implement Alternative Retirement (voluntary retirement plan)	
	Appointment Process Improvement and Downs	
Define and Implement “Endowments” by Sector	Planning Staff Health	
Attendance Record	Cultural Integration Programs and Employee Recognition	

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In terms of citizen`s service satisfaction

Keeping	Points of Attention and HR Management	
	Promote Internal Staff Transfer	
	Retraining Register	
	Social Responsibility Program for Employees	
Career Planning	Civil Service	
	Management System (competition/contests)	
Superior Career Institute	Modernize the Career Institute	

Administrative improvement is for providing the government and its human resources management with new processes and technologies (ICTs) to enable more efficient government management and improved quality of services.

Table II-4 Administrative program

Sector	Name of Project	Remark
Electronic Records	Electronic Document Management	
Hospital Management	Implementation of Operations Management System	
	Multipurpose Electronic Records	
Virtual Table Entry	Remote Signatures	
	Registry of Public Construction Work	
Electronic Procurement System	City Registry System	
	Implement Electronic Web Notices	
	Archive Digitization	
Others	Implementing Electronic Web Notices	
	Computerization of the Civil Registry	
	Hospital Shifts	
	Teaching Management Module	
	Re-engineering Procurement Processes	

Intelligent city is for innovative projects that enhance quality of life of those who reside, study, work and are linked in the city.

Table II-5 Innovative programs

Sector	Name of Project	Remark
Traffic and Public Space	Traffic information in real time (data sets).	- Remote lighting channels (intelligent lighting) -Online inspector devices (PDA)
	Taxis Sensors: incorporate GPS technology	
	Intelligent Metrobus stops: information for passengers	
	Posters with updated legends	
	Traffic violations on PDA	
	Fixed points for security control (cameras)	
Procedures and	School registration systems	

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In terms of citizen`s service satisfaction

Government Services	Electronic System for Hospital Shifts	
	Immediate Response Services	
	Virtual table entry (online) to simplify and streamline paperwork processes	
	Hospital Management System (real-time applications)	
	Electronic records FAQs	
	Computerization of the Civil Registry	
	Automatic help terminals for high-transition points	
	Electronic payment channels (fines, taxes, etc.)	
	City network (connectivity)	
	City Centre	

Information is for generating, integrating and using accurate, timely and relevant information to citizens, fostering a policy of open government, collaborating and participating.

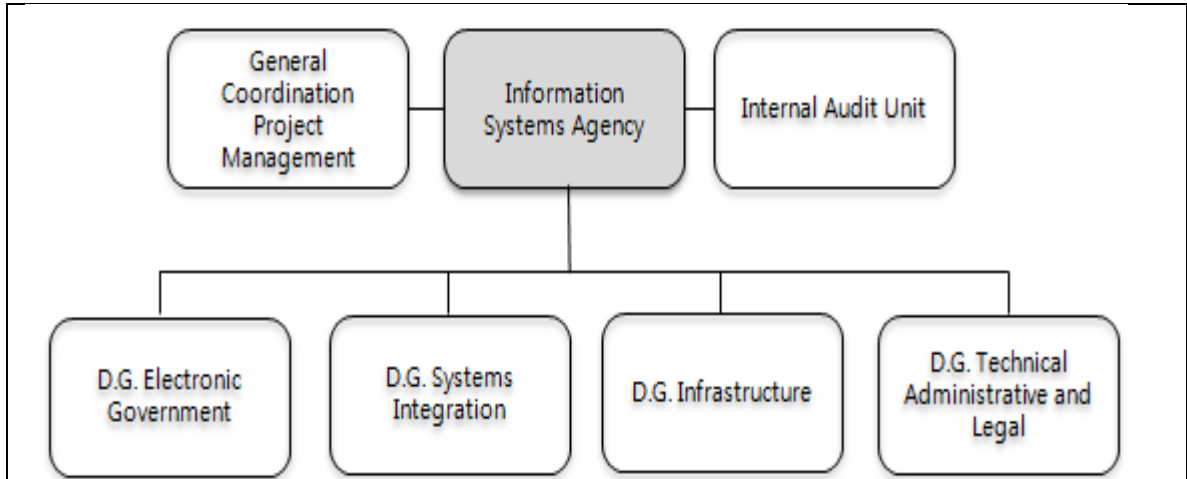
Table II-6 Open government programs

Sector	Name of Project	Remark
Open Government, Information and Communication	Digital platform: new website for the Government, Culture, Tourism	
	mobile devices	
	Citizen participation platform	
	data on city information	
	Development of applications from data sets	
	International Modernization Fair	

3.3 Buenos Aires ICT Organization and Business Process

The Information Systems Agency is to organize and coordinate with all agencies of the Executive Branch, the telecommunications infrastructure and information systems, to give the city a self sufficient, reasonable plan, to coordinate the government mail, which allows citizens to have an access to government through electronic and telephone information services, and to bring transparency to the management.

Figure II-5 ICT organization of Buenos Aires



3.4 Implications

Derived implications for ICT environment in Buenos Aires are illustrated as in below.

- Buenos Aires ICT Policies and Strategies are well organized by city government, which is to develop a society based on knowledge and intellectual potential and to improve the quality of people`s lives in Buenos Aires.
- As a 56th place of e-GDI index, The ICT environment of Buenos Aires city is quite developed compare with other developing countries.

4. Stakeholders Analysis

4.1 Stakeholders Analysis Overview

Stakeholder Analysis is a methodology used to facilitate institutional and policy reforming processes by accounting for and often incorporating the needs of those who have a ‘stake’ of an interest in the reforms under consideration. With information on stakeholders, their advocates can choose how to best accommodate them, thus assuring policies adopted are politically realistic and sustainable.

Although Stakeholder Analysis originated from the business sciences, it has a field that now incorporates economics, political science, game and decision theory, and environmental sciences. Current models of SA apply a variety of tools on both qualitative and quantitative data to understand stakeholders, their positions, influence with other groups, and their interest in a particular reform.

In addition, it provides an idea of the impact of reform on political and social forces, illuminates the divergent viewpoints towards proposed reforms and the potential power struggles among groups and individuals, and helps indentifying potential strategies for negotiating with opposing stakeholders.

According to the World Bank Stakeholder Analysis guideline, Stakeholder analysis is divided into Four-Step Process which illustrated as follows:

- Identify Key Stakeholders
- Assess Stakeholder Interests and the Potential Impact of the Project
- Assess Stakeholder Influence and Importance
- Outline a Stakeholder Participation Strategy

Based on this World Bank Guidelines, the project team customizes stakeholder analysis tool focused on the derivation of key stakeholders for Buenos Aires AIO system implementation. Thus, stakeholder analysis is simplified in 2 categories as to stakeholder classification and assessment phase.

Furthermore, customized stakeholder analysis adds implications phase which will describe detailed way in forward to implement AIO system in Buenos Aires City by each selected stakeholder group.

Table II-7 Comparison of Stakeholder Analysis

Division	Steps
World Bank Stakeholder Analysis	Identify Key Stakeholders
	Assess Stakeholder Interests and Potential Impact of the Project
	Assess Stakeholder Influence and Importance
	Outline a Stakeholder Participation Strategy

Customized Stakeholder Analysis	Classification of Stakeholders
	Stakeholder Assessment through customized evaluation indicators
	Implications

4.2 Classification of Stakeholders

The first step of stakeholder analysis is to classify stakeholder groups involved in AIO system implementation for Buenos Aires City through the process of stakeholder identification.

According to the process of World Bank Guideline, key stakeholders should be selected by following considerations.

Table II-8 Considerations for the stakeholder identification by World Bank

<ul style="list-style-type: none"> • Who are potential beneficiaries? • Who might be adversely impacted? • Have vulnerable groups been identified? • Have supporters and opponents been identified? • What are the relationships among the stakeholders?

*Sources: World Bank website, Stakeholder Analysis ([http://www1.worldbank.org/publicsector/anticorrupt/ PoliticalEconomy/stakeholderanalysis.htm](http://www1.worldbank.org/publicsector/anticorrupt/PoliticalEconomy/stakeholderanalysis.htm))

Through the defined considerations which mentioned above, stakeholders for Buenos Aires city AIO system implementation project are selected as follow:

Table II-9 Selected stakeholder list

No.	Stakeholders	Detailed Stakeholders
A	Buenos Aires City Policies/Strategies decision makers	Buenos Aires City Council Buenos Aires City Mayor Leader Deputy of Government (Economy and City finance) Deputy Governor (Modernization & Public Social Welfare Service)
B	Project implementation/ management Organizations	Modernization Division Public Social Welfare Department Information Technology Department Economy, Finance & Treasure division
C	City Government Organizations related to the project	Modernization Planning Division Information Technology Department Public Social Welfare Department Public Medical Service Management relevant Department Public School Management relevant Department Public Pension Management relevant Department Contracted Store Management relevant Department Public Bank Management relevant Department Economy, Finance & Treasure Division Project Management Office Other Public Service relevant Department/Agency for Citizen
D	Civil Officials	City government officials or Staffs who are using AIO relevant system
E	Citizens	Public service users
F	Service Owner	Public Hospitals

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In terms of citizen`s service satisfaction

		Schools Public Banks Contracted Stores
G	Local IT Companies	System provider Solution Consultancy Project implementation
H	Foreign IT Companies	System provider Solution Consultancy Project implementation
I	Foreign Government	Project relevant Ministries or Organizations (e-Government/ICT)
J	Argentina Government	Other Project relevant Ministries or Organizations (e-Government/ICT)
K	International Organization/ MDBs	World Bank (WB) Inter-American Development Bank (IDB) United Nations Development Program (UNDP) Others
L	Foreign ODA Organizations	KOICA KEXIM (EDCF loan) Others

When key stakeholders are selected, stakeholder groups are classified 4 different groups which compose a large array of institutions and individuals that could potentially affect or be affected by the proposed intervention for the Buenos Aires City AIO system implementation.

Classified stakeholder groups are described in accordance with their interests and affects level as follow:

Figure II-6 Classification of key Stakeholders



- **(Group 1) Borrowers:** Borrowers stand for the order of project, management and execution related principal organization/institution to conduct Buenos Aires City AIO system implementation project.
 - E-Government / ICT projects order initiatives; Buenos Aires City Council, mayor or executive level officials who are influential in driving project decisions for the AIO system implementation project.
 - Organization/institution of project planning and support for the project; City Development policy planning division, Economy, Finance & Treasure division
 - Project management and implementation organization/institution; Modernization and Public Social Welfare Division, Information Technology Department
- **(Group 2) Beneficiaries:** Beneficiaries stand for organization/institution or individuals who obtain benefits through the Buenos Aires City AIO system implementation project
 - AIO system service providing and using major city government organization/institution; Modernization and Public Social Welfare Division, Information Technology Department,

- and other relevant departments or agencies in Buenos Aires City government. (In detail, please refer to *Table II-3*.)
- Working environmental beneficiaries; City Government officials and staffs who use AIO relevant system or working tasks.
 - Service beneficiaries; citizens, Service Owners, etc.
 - **(Group 3) Affect groups:** Affect groups stand for organization/institution or individuals who obtain benefits through activities of project promotion or service provision, etc.
 - Local/foreign IT companies, which pursue interests through the market development and project implementation.
 - Foreign governments, which pursue national interests through the strategic support and exchange
 - **(Group 4) Other interested groups:** Other interested groups stand for cooperation or support organization/institution for the Buenos Aires City AIO system implementation project.
 - Cooperation support for funding, labor force and technical assistance; international organizations, MDBs and foreign ODA organizations.

4.3 Stakeholder`s Assessment

Stakeholder assessment is reflected by the result of environmental and documentary survey, the opinion of local companies and relevant agencies` staffs, and the interview result from city government departments and agencies related to the implementation of AIO system in Buenos Aires to assess the key stakeholders.

Stakeholder assessment is composed of two stages; Assessment of each stakeholder based on the analysis utilized by World Bank and customized Stakeholder evaluation for the AIO system implementation project.

In order to derive key stakeholders through these stages, utilized assessment resources and materials are are described as follow:

Table II-10 Assessment resources and materials for stakeholder analysis

Stage	Evaluation basis		Resources and materials
First Stage (World Bank Basis)	Interest & Potential Impact		Pre-documentary survey (Reports, Web site, etc) Interview result in each department/agency Corporations/city government staff`s opinion Collected documents in BA (survey sheet, report, statistics, city policy, etc.)
	Influence & Importance		
Second Stage (Customized basis)	Possibility of project realization	Promotion influence	
		Project readiness	
		Awareness of the project	
	Intent of project promotion	Political intent	
		Activeness of cooperation request	
		Funding/budget Securement	

4.3.1 First Stage: Stakeholder Assessment based on the World Bank basis

The first Stage of stakeholder assessment aims to define each stakeholder`s interest, impact, importance and influence for Buenos Aires AIO system implementation project through utilization of verified analysis basis.

For the assessment of each stakeholder, evaluation basis are divided into two categories; Interests & Potential Impact and Influence & Importance which are based on the World Bank stakeholder analysis basis.

Table II-11 Evaluation basis for the first stage of Stakeholder assessment

Evaluation basis	Detailed basis
Interests & Potential Impact	What is the stakeholder`s expectation of the project? What benefits are there likely to be for the stakeholders? What resources might the stakeholder be able and willing to mobilize? What stakeholder interests conflict with project goals?
Influence & Importance	Power and status (political, social, and economic) Degree of organization Control of strategic resources Informal influence (e.g. personal connections) Power relations with other stakeholders Importance to the success of the project

As a preparation step of the first stakeholder assessment, stakeholder`s roles and interests based on the classified stakeholders are defined through the consideration of evaluation basis which mentioned above.

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Table II-12 Stakeholders` Roles and Interests

Groups	No	Stakeholders	Roles	Interests
Borrowers	A	Buenos Aires City Policies/ Strategies decision makers	Key decision making subjects for the e-Government relevant projects and AIO system implementation project that instruct project strategies, planning and execution	Development of Social economy and sustainable public social service
			Budgetary and legal issues decision makers for the city development and operation	ICT sector development for the conversion to the Information society for the City
				Public social service development through the introduction of advanced ICT technologies
	B	Project implementation/management Organizations	Establishment of Public Citizen Service and e-Government / ICT relevant project plan for city government	Provision of Public Social Service for city government and citizens
			Suggestion of project execution for AIO system implementation project related agencies or departments	Enhancement of work efficiency and business process by the introduction of advanced technologies
			AIO system implementation project management and implementation	Improvement of existing public social service based on information in order to have sufficient IT system for better public social service
Beneficiaries	C	City Government Organizations	The subject of public social service data provision and utilization	Introduction of advanced technologies and systems
		related to the project	System utilization subjects to improve business process and working tasks	Improvement of work efficiency and data accuracy
	D	Civil Officials	The subject of AIO system operation, management and utilization	Improvement of work efficiency
				Reduction of working time and business process
	E	Citizens	The subject of public social service utilization	Convenient utilization of public social service
	F	Service Owner	The subject of public social service operator	Speedy and accurate operating
Convenient service providing				
G	Local IT Companies	The execution and implementation subject of AIO system implementation project	Making profits through the project order obtainment	
		Projects are normally carried out through the relationship with the city government department such as Modernization Department,		

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			Information Technology Department, etc.	
H	Foreign IT Companies		The execution and implementation of AIO system implementation project	Making profits through the project order obtainment
			Projects are normally carried out through the relationship with the city government department such as Modernization Department, Information Technology Department, etc.	Pioneering new overseas markets
I	Foreign Government		Supporting domestic IT companies through the consultation between countries	Supporting to pioneer new overseas markets for domestic companies
			Strategic exchange and cooperation to pursuit beneficial rights; resource development, etc.	Securing national concessions through the exchange and cooperation
J	Argentina Government		Restrictive official Support for the implementation of AIO system as e-government development of the capital city of Argentina	Improvement of national public social service policies and establishment of strategies direction
			The exertion of influence through e-Government relevant projects support and cooperation	Sustainable economic and social service development in the nation
K	International Organization/ MDBs		Supporting national / city modernization strategies	International economic development and support
			Setting the project direction through the strategy establishment of AIO system implementation project	Resolving social gap
			Promotion vitalization for relevant projects through the participation inducement of fund, expertise, foreign governments and IT companies	ICT industry development
			The exertion of influence through e-Government relevant projects support and cooperation	
L	Foreign ODA Organizations		Financing for the implementation of AIO system	Pioneering new overseas markets
			Promotion vitalization for the e-Government project through the participation inducement of funds, expertise, foreign governments and IT companies	Resolving information gap
			The exertion of influence through the e-Government relevant project support and cooperation	Enhancing the national prestige through the foreign exchange
				Exporting support for the national IT companies

When stakeholder`s roles and interests are identified, each stakeholder`s importance and influence degree are evaluated through the qualitative stakeholder assessment based on World Bank`s evaluation basis.

Importance and degree of influence of each stakeholder is divided into 6 different levels in consideration of each stakeholder`s interests at stake in relation to AIO implementation project through the evaluation of each stakeholder`s effects.

Table II-13 Stakeholder assessment based on World Bank evaluation basis

	Stakeholders	Interest(s) at Stake in Relation to Project	Effect of Project on Interest(s) + 0 -	Importance of Stakeholder for Success of Project U = Unknown 1= Little/No Importance 2= Some Importance 3= Moderate Importance 4= Very Importance 5= Critical Player	Degree of Influence of Stakeholder over Project U = Unknown 1= Little/No Influence 2= Some Influence 3= Moderate Influence 4= Significant Influence 5= Very Influence
A	Buenos Aires City Policies/Strategies decision makers	Development of Social economy and sustainable public social service	+	(5) Critical Player: Making policies and strategies in order to archive enhancement of public social service	(5) Very Influence: Project should be conducted under the provision of city policies and strategies
		ICT sector development	+		
		Public social service development through the introduction of advanced ICT technologies	+		
B	Project implementation/ management Organizations	Provision of Public Social Service data for city government and citizens	+	(4) Very Importance: As an execution group of the project, all relevant tasks are to be conducted under the city policy and plan	(5) Very Influence: As the project execution group, project`s success depends on their intent
		Enhancement of work efficiency and business process	+		
		Improvement of existing public social service based on information in order to have sufficient IT system for better public social service	+		
C	City Government Organizations related to the project	Introduction of advanced technologies and system	+	(4) Very Importance: Understanding of current status of relevant system, work process, etc.	(4) Significant Influence : Enhancement of work efficiency and time saving, etc.
		Improvement of work efficiency and data accuracy	+		
D	Official Of vil	Improvement of work efficiency	+	(4) Very Importance:	(3) Moderates Influence :

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		Reduction of working time and business process	+	Understanding of current status of relevant system, work process, etc.	To achieve work efficiency and resolving working time through the introduction of the relevant system
E	Citizens	Convenient utilization of public social service information services	+	(4) Very Importance: Satisfaction Rate of Citizens about new system	(1) Little/No Influence: Stakeholders who only have benefit
F	Service Owner	Speedy and accurate operating	+	(4) Very Importance: Core operators of new system	(1) Little/No Influence: Stakeholders who only operate new process
		Convenient service providing	+		
G	Local IT Companies	Making profits through the project order obtainment	+	(3) Moderate Importance: Understanding level of Project implementation, technology skills, etc.	(2) Some Influence: System Implementation, service provision
H	Foreign IT Companies	Making profits through the project order obtainment	+	(3) Moderate Importance: Understanding level of Project implementation, technology skills, etc.	(2) Some Influence: System Implementation, service provision
		Pioneering new overseas markets	+		
I	Foreign Government	Supporting to pioneer new overseas markets for domestic companies	+	(2) Some Importance: Depends on the cooperation level with Buenos Aires city Government	(3) Moderate Influence: Knowledge exchange, International cooperation and Technical Assistance
		Securing national concessions through the exchange and cooperation	+		
J	Argentina Government	Improvement of national public social service policies and strategies direction establishment	0	(2) Some Importance: All national policies and strategies involve with city government`s policies and strategies	(1) Little/No Influence: Depends on the project scope
		Sustainable economic and social service development in the nation	0		
K	International Organizations/ Multilateral Development Banks (ADB, IDB)	International economic development and support	+	(3) Moderate Importance: Cooperation opportunity and Financial/Technical support	(4) Significant Influence: International cooperation, Financial support and Technical Assistance
		Resolving social gap	0		
		ICT industry development	+		
L	Foreign ODA Organizations	Pioneering new overseas markets	+	(2) Some Importance: Secure funding sources, technical support	(4) Significant Influence: International cooperation, Financial support and Technical
		Resolving information gap	0		
		Enhancing the	+		

		national prestige through the foreign exchange			Assistance
		Exporting support for the national IT companies	+		

The following table is summarized importance and influence status of each stakeholder that is analyzed by World Bank evaluation basis

Table II-14 Mapping stakeholders` Relative Influence and Importance

Influence of Stakeholder	Importance of Activity to Stakeholder					
	Unknown	Little/No Importance	Some Importance	Moderate Importance	Very Importance	Critical Player
Unknown						
Little/No Influence					Citizens, Service Owner	
Some Influence				Local/Foreign IT Companies		
Moderate Influence			Foreign Government		Civil Officials	
Significant Influence			Foreign ODA Organizations	International Organizations/ MDBs	City Government Organizations related to the Project	
Very Influence			Argentina Government		Project implementation/ management Organizations	Buenos Aires City Policies/ Strategies decision makers

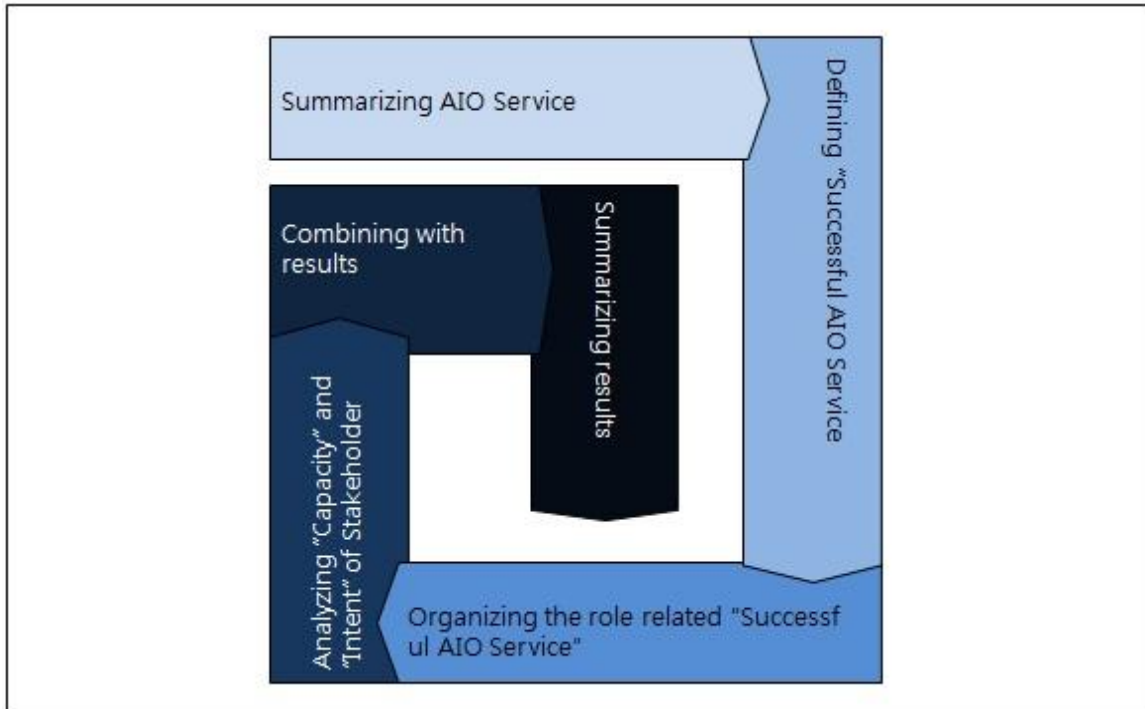
4.3.2 Second Stage: Stakeholder assessment based on the customized basis

In the first stage, we defined key stakeholders through Influence and Importance with AIO System. In the second stage, we will analyze specifically the possibility for the implementation of “Successful AIO Service” in the point of key stakeholder`s view.

For providing AIO Service, “Successful AIO Service” should be clearly defined firstly.

Next, major roles of each stakeholder were defined and classified on the basis of the establishment of “successful Smart Card service (AIO),” and each stakeholder was evaluated according to their “capacity and intent for the project execution.”

Figure II-7 Flowchart of Second Stage



- Summarizing AIO Service

AIO Service is a part of Buenos Aires City Government’s public electronic service such as the social service, healthcare service, education service, and so on through “Citizen Card”. It means each citizen has a “Citizen Card”. When citizens use public services, they must touch the “Citizen Card” to the equipment. Then, the corresponding information is automatically sent and gathered to the data center of Buenos Aires City Government. Through this system, Buenos Aires citizens can use public service more conveniently; Buenos Aires City Government can easily, quickly and accurately figure out total usage, total cost, and trends of public service; and Buenos Aires City Government can accurately forecast the budget of public service for the coming years.

Defining “Successful AIO Service”

The successful establishment of AIO Service is the final goal of AIO project. The result we aim to finally achieve through AIO service can be estimated by the standards, described as follow:

- Convenience of AIO Service
- Efficiency of Management
- Rapidity and Accuracy of Data
- Activation of AIO Service

City government of Buenos Aires foresees that if AIO service is established successfully, the quality of service will be remarkably improved,

The stakeholders’ capacity and roles are defined by 3 phases as planning, implementation and operation, and in line with this, the possibility of “Successful AIO Service” is described in next paragraph.

- Organizing the role related “Successful AIO Service”

As mentioned before, the core capacity related to standards of “Successful AIO Service” is

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classified in 3 phases as planning, implementation and operation. Along with this, related stakeholders are defined and organized as below:

Table II-15 Core Capacity for “Successful AIO Service”

Phases	Core Capacity	Description	Related Stakeholder
Planning	Assessment	- The ability of the current status assessment	Civil Officials
	Analysis	- The ability of the current status analysis such as public service, business process, IT service, effectiveness and so on - The ability of finding current issues - The ability of deriving solution	Civil Officials
	Design	- The ability of designing the to-be public service model - The ability of defining the to-be business process - The ability of designing the to-be IT service model for the public service - The ability of designing the needed IT system and defining the function of each system	Civil Officials
Implementation	Technique	- The IT technical ability for the implementation such as infra, database, Programming language, Framework and so on	Project implementation/ management Organizations & Local/Foreign IT Companies
	Management	- The ability of planning for the system implementation - The ability of managing the project scope for the system implementation - The ability of managing the budget for the system implementation	Project implementation/ management Organizations
	Budget	- The budget for the implementation	Buenos Aires City Policies/ Strategies decision maker & International Organizations/ MDBs
	Infra	- The Infra for the implementation such as electricity, network, server and so on	-
Operation	Design	- The ability of designing the operation model and defining the operation process detail	Civil Officials & City Government Organizations related to the Project
	Technique	- The IT technical ability for the system operation	City Government Organizations related to the Project
	Management	- The ability of managing the operation process	Civil Officials
	Improvement	- The ability of planning and executing for the improvement	Civil Officials

In the next paragraph continuously, the stakeholders` capacities to achieve “Successful AIO Service” are analyzed in two specific dimensions, ‘Capacity’ and ‘Intent’ of Stakeholder. The basic method of evaluation is to score each component such as experience, knowledge and intent for the implementation and the scores are divided into 3 levels as “High”, “Middle” and “Low”.

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The actual capacities and intent to achieve “Successful AIO Service” are evaluated based on the standards as follow:

Table II-16 Analyzing the capacity and intent

Phases	Core Capacity	Related with Stakeholder	Experience	Knowledge	Intent
Planning	Assessment	Civil Officials	●	●	●
	Analysis	Civil Officials	◐	◐	●
	Design	Civil Officials	◐	◐	●
Implementation	Technique	Project implementation/ management Organizations & Local/Foreign IT Companies	●	●	●
	Management	Project implementation/ management Organizations	●	●	●
	Budget	Buenos Aires City Policies/ Strategies decision maker & International Organizations/ MDBs	◐	◐	◐
	Infra	-	◐	●	◐
Operation	Design	Civil Officials & City Government Organizations related to the Project	●	●	●
	Technique	City Government Organizations related to the Project	●	●	●
	Management	Civil Officials	●	●	●
	Improvement	Civil Officials	◐	◐	◐

- Combining with and Summarizing Result

In this paragraph the results in the previous paragraph are scored, combined with the phase of the project and summarized to calculate the possibility of “Successful AIO Service” based on the stakeholder analysis view.

For the calculation, the standard of the weight is defined as Experience (25), Knowledge (25) and Intent (50), and following these standards the scores are rated as follow:

Table II-17 Scoring the capacity and intent

Phases	Core Capacity	Related with Stakeholder	Capacity	Intent	Summary	Combination	Possibility
Planning	Assessment	Civil Officials	50	50	100	83	83
	Analysis	Civil Officials	25	50	75		
	Design	Civil Officials	25	50	75		
Implementation	Technique	Project implementation/	50	50	100	78	

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		management Organizations & Local/Foreign IT Companies					
	Management	Project implementation/ management Organizations	50	50	100		
	Budget	Buenos Aires City Policies/ Strategies decision maker & International Organizations/ MDBs	25	25	50		
	Infra	-	37.5	25	62.5		
Operation	Design	Civil Officials & City Government Organizations related to the Project	50	50	100	88	
	Technique	City Government Organizations related to the Project	50	50	100		
	Management	Civil Officials	50	50	100		
	Improvement	Civil Officials	25	25	50		

Through the result, the score of the capacity and intent to achieve “Successful AIO Service” is 83% in the point of the stakeholder analysis view. It means the possibility of “Successful AIO Service” is about 83% in the point of the stakeholder analysis view.

III. Technical Analysis (TA)

1. Overview

At present, Argentina is ranked at 56th among the countries with e-GDI. On the basis of its substantial level of advanced IT, Argentina is providing a variety of IT services, and in particular, the city of Buenos Aires is providing various civil services on the basis of the electronic government related laws. Currently, Buenos Aires city government has been striving to provide better IT services to citizens in various ways; establishing the Ministry of Modernization; strengthening and stabilizing social security services for the underprivileged; and contemplating the implementation of the “Citizen Card” solution which can gradually offer various services to all citizens.

2. Requirement Analysis

The philosophical goal of this project is to provide not only physical benefits, but also a variety of virtual services that are safe and rapid for citizens and visitors of the city of Buenos Aires through the modern technology by using a simple object like a card.

The target categories of service currently added are described as below, and the underlined parts are intended to promote as for the first step.

Based on the interview result and materials from city government of Buenos Aires, the derived requirements in each sector are as follows.

Table III-1 Requirements

Target category	Sector in detail	Remarks
Social care	<u>Basic food</u> and shelter Activities for Third age Families and Individuals in State vulnerable social group Bonuses	
Education	Institutions Educational Libraries -Educational Grants School-Book	
Medical	Shift system for service Hospitals Chronic Disease care Citizen Health Plans Drug Health Card Vaccination	
Entertainments	Museums Theaters Sports Centers Culture	
Banks	Prepaid Wallet Billing / Payments	
Tourism	Notification of Benefits by City Map(GIS)/Information Handling Different Languages	
Transportation	Bus (school tour) Subte Train Metrobus	

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	Bicycles Parking	
Other services	Telephony Wi-Fi Business Benefits Licenses Steps	

*Source: City government of Buenos Aires

The table below shows the scope of project to be actualized by the establishment of AIO system, as well as the list of the existing services the city of Buenos Aires has been providing to citizens (in part).

Table III-2 Number of bebeficiary and sector

Benefits Specific to the City of Buenos Aires.	Number of beneficiaries	Remarks
SOCIAL Social Plans (further details)	500,000	
HEALTH Social Coverage for BA Citizen(Porteña ⁴) Social Plans (further details)	300,000 Unknown	
EDUCATION Scholarships for Students (\$) Scholarships for Graduates (\$) School transport (presence) Cafeteria (presence) Purchase of books (\$) Useful Benefits (\$) Paid internship (\$)	80,000 1,000 Unknown 460,000 250,000 300,000 2,000	
City government of Buenos Aires Paperwork Health / Hospital Tax	Unknown Unknown Unknown	
CITY STAFF Buenos Aires with You	80,000	

*Source: City government of Buenos Aires

Among the existing programs, the size of existing beneficiaries and the detailed information on providing services are as below.

Table III-3 Program 1: Cash transfer programs (Tentative on 08 of December 2012)

Program	No. Beneficiaries	Mode of delivery
Citizenship porteña	55,000	Purchase card on the network of participating businesses
Social Ticket	28,000	Checking of tickets to be redeemed at participating businesses Network
Care for homeless families (690)	8,000	Card withdrawal of cash or Cheque
Adolescence	6,500	Debit card at supermarkets, bookstores, pharmacies, clothing houses
Our families	6,000	Card cash withdrawal

⁴ People who is living in Buenos Aires

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Studying is working	5,000	Debit card to withdraw cash and / or shop at participating merchants
Rebuilding ties	3,000	Cash
Living at home	3,000	Prepaid card for cash withdrawal
And inclusion training for work	2,400	Prepaid card for cash withdrawal
Care home gerontological	1,500	Indirect payment to the AGD
My place	140,000	ATM card or cash delivery window

Table III-4 Program 2: Other Initiatives / Programs benefits

Programs	Quantity Beneficiaries	Remarks
Buenos Aires Health Coverage	300,000	
BA with you	75,000	
Jugotecas neighborhood	1,000	
Major Card (Retirees and pensioners minimum)	80,000	
Card 102 (Children / as and adolescents)	Unknown	

Table III-5 Recognizable Potential Program Beneficiaries

Potentials	Amount Beneficiaries	Remarks
Employees (minus having BA with you)	65,000	
Students from public schools (preschool, primary, secondary and non-university)	336,000	
Retirees with minimal (discounted those Major Card)	230,000	
Surveyors	5,000	

- List of other potential program
 - Tourists from other provinces
 - Beneficiaries of housing / housing loans
 - Veterans of Malvinas
 - Newborns
 - Neighbors who pay ABL
 - Neighbors who perform procedures

In order to promote the program mentioned in 2. Requirement of this chapter, Smart Card solution is being considered. Under the goal of realizing All-In-One service by utilizing Smart Card, new systems are being developed in order to distinguish beneficiaries of specific services or to integrate diverse programs into one Tool.

3. Current ICT Status Analysis

3.1 Current ICT description

In 2012, main ICT systems of Buenos Aires are as follows:

- Category 1) **Integrated System Management and Administrative Operations Maintenance Work Orders or Work in Public Space:** Implemented on SAP ERP, includes Opening Permits in the Milky Public Works Management, Public Lighting, Furniture and Red Storm. Example: 200 000 permits are processed annually. Technical objects (lights, sidewalks, pavements, trees, etc.) are georeferenced.
- Category 2) **System Electronic Document Management:** is in place and functional deployment process throughout the organization GCABA ⁵ ; serving generation Caratulaciones average of 180,000 to 500,000 per Month by Month Passes for the entire field of Public Administration GCABA. The main component modules are: Signature Head of Government Actions, Archive, Official Communications, Electronic File, Desk-top single electronic document generator, location of Works and Services, Porta Firm Performance Tracking, Cam / Reports
- The modules to be implemented soon are: Numerator External Beneficiary Identification Record, Plans Social Survey Staff, Human Resources, Electronic Builders Registration Public Works, Civil Registration Digital
- Category 3) **Single System Citizen:** with your service request modules (complaints, grievances, complaints, requests), shift management, Registration general information Centrales Telefónicas integration, integration with other systems (SADE, SAP, PRRAC) and unification of citizen data is implemented and is used by the call center (147) Management Centers and Citizenship, table entries, from the Web, GCABA ministries and secretariats; operating in the Data Center of the Information Systems Agency (ASI), taking average generation of 45,000 service requirements (Complaints, complaints, complaints, requests) per month and 95,000 shifts per month for the whole field of Public Administration GCABA.
- Category 4) **Integrated Management System liquidation of assets:** it is the system to settle the salary of more than 100,000 agents. It also has integrated new decentralized load for settlement from dealings, to achieve operational decentralization.
- Category 5) Integrated Financial Management System.
- Category 6) **Unit Geographic Information Systems:** browser is a web-based digital map, allowing the safe management of sensitive information through the allocation of user profiles with passwords. Interactive maps, unlike traditional ones, offer the possibility to select some of the information available, that you want to display or hide, with the choice of the symbols that best represents the elements to be mapped, and with the ability to view areas without changing the scale or, conversely, display information in different scales.
- It allows the user to interact with the information represented cartographically from the display, query and analysis of spatial data. The information that integrates interactive map comes from the different areas responsible for each data, with the possibility of having them define the way in which to share information with other organisms. Sumado to the potential of this application is the ability to manage the foundation data through a web application that allows loading and modifying data in a personalized way and according to user needs. All

⁵ Government of the Autonomous City of Buenos Aires (Abbreviation of Gobierno de la Ciudad Autonoma de Buenos Aires)

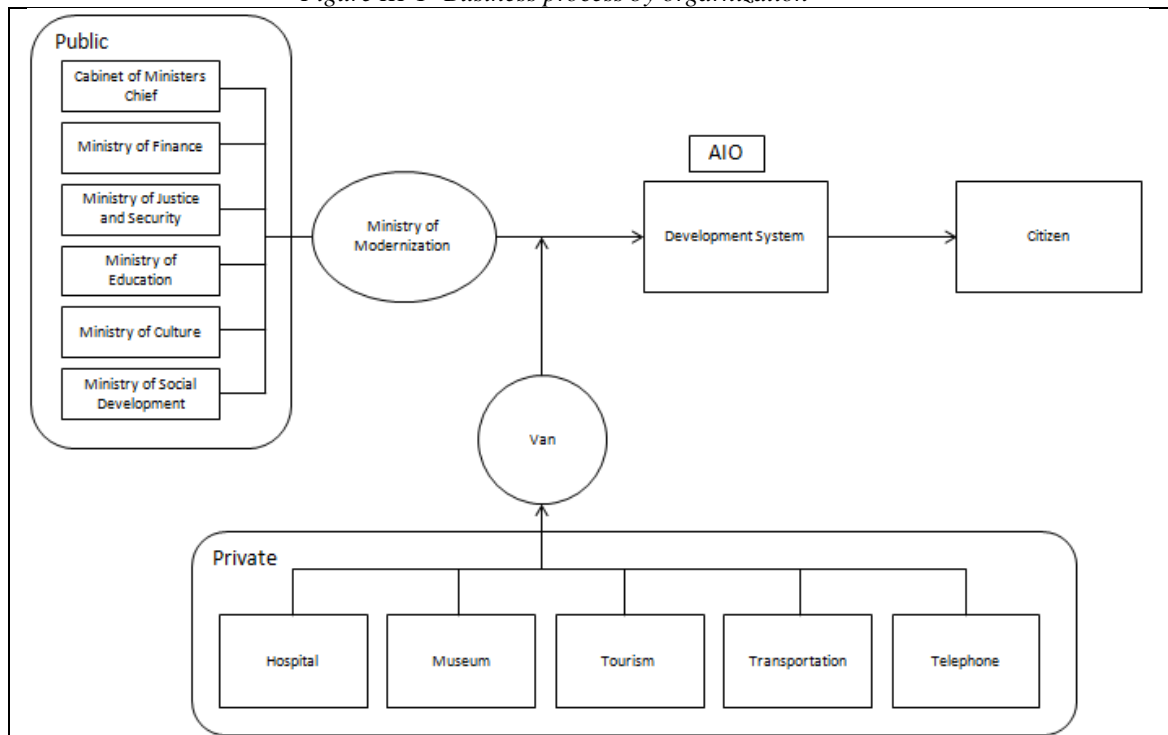
these tools, Interactive Map and Database Management, enable comprehensive management and update information from the load to the automatic display data on a map in real time. Along with these tools, the Geographic Information System of the City Government also includes the dissemination of general interest via the interactive map of Buenos Aires, which is available for free access by the residents of the city. This tool also allows the query runs combined between different rail lines, subway and bus.

- Category 7) **Integrated Tax Management System:** An outline-oriented single view of the taxpayer and taxable objects, which seeks to promote the categorization, monitoring compliance and knowledge of your tax situation.
- Category 8) Single taxpayer information, accounts, facilities plans, and tax revenues: The taxes that are already operating in the new system are Gross Revenue-simplified scheme Withholding Agents and Brokers Gross Income. Other modules: Stamps, Patents, lighting, sweeping and cleaning, overall emissions, Gross Income-Regime General, Judicial Management and Management Prejudicial. La architecture was designed in layers. The first rule of business (back end), was developed in COBOL-CICS-DB2, while the front end-divided into a services-is built in Java and UI layer was developed in Java Server Faces with Rich Faces. The system is consisted of modular and reusable components, having the concept of core modules (common to all taxes) and specific tax, which interact with the core modules.

3.2 Business Process

Ministry of Modernization is in the process of promoting AIO service system in cooperation with related agencies of Buenos Aires listed as below. AIO service system will be established and provided to citizens in collaboration with Van, and the service will cover the area of health care, tourism, education, etc.

Figure III-1 Business process by orgarnization



3.3 H/W, S/W, N/W Analysis

3.3.1 H/W

The city of Buenos Aires has servers in datacenter with physical ability which consists of a mainframe, 200 physical servers and 400 physical cores (pads). The virtual capacity thereof is 450 virtual servers. 30,000 of equipment in datacenter and personal devices are connected with the city of Buenos Aires and 145,000 of GCABA not connected to the network, of which 15,000 are for Education. The communications network is a ring between redundant servers 20 gigabytes. As for energy, the total wattage yields 250 KVA heat and 500,000 BTU / hr. It has a generator with a total capacity of 300KVA with 8 hours of battery life. It is equipped with two redundant UPS 80 KVA with 15 minutes of battery life with automatic starter generator and a 40 KVA with 15 minutes of battery life with automatic starter set. The storage is 200 terabytes.

3.3.2 S/W

The different technologies used for development within the area are:

Table III-6 Development technology

Technologies:	
Idioms	Java, C #, VB6, VB.NET, Cobol, PHP, Python, ASP, HTML, Cobol / CICS
Middleware	JBOSS, SAP PI, Websphere AS
Database Engines	MS SQL Server, Oracle, MySQL, Postgres, DB2
Frameworks	J2EE, NET, Synfony, Cake, Django
Platforms	MS Windows, Linux
CMS (Content Manager)	Drupal
Workflows	JBPM
Graphic Design	Flash, Photoshop, Illustrator, CorelDraw
QA	TestLink, Selenium
Bug & Tracker	Mantis, Jira

3.3.3 N/W

The City of Buenos Aires has a network over 500 sites, which are distributed as follows:

- Hospitals: 34
- Health Centers: 41
- Delegations Min Education: 36
- Communal and Records Offices: 18
- Theaters and Cultural centers: 53
- Libraries: 16

- Museums: 13
- Social Development: 26
- Other: 263

The transport and access network are based on MPLS protocol, which guarantees service classes and bandwidth to carry voice (telephony), image (video conference cameras), and Internet applications.

Network nodes are composed of Cisco Routers, with the following distribution:

- Backbone nodes: 7
- Nodes of concentration:22
- Users Nodes:471

Physical transport technologies consist of 500 primary links, which correspond to optical fiber 407 and the remainder metallic pair. Meanwhile, redundant links are formed with approximately 200 Wi Max and 100 Wi Fi.

The network is connected to internet service through multiple vendors. The IP address is GCBA own.

Telephony is based on the central core of concentration and transport.

The suppliers with whom GCBA works are listed below, indicating which area:

- Trans IESA: Provider routing equipment (Cisco) for the nodes of the network Contractor by the installation and maintenance of network nodes.
- Alcatel: Supplier of equipment for data center switching. Equipment supplier of WiFi access.
- Phone: Supplier of optical fiber links and hardware to link the nodes of the network service provider Internet access.
- Iplan: Provider of Internet access service.
- BONUS: Provider of Internet access service.
- Sure: Service provider of internet access.
- CABASE: Argentine Interconnection to NAP.
- DMC: WiMax equipment maintenance.
- Siemens: Maintenance of equipment / telephone exchanges.

Regarding the organization of resources, they are grouped into three main areas:

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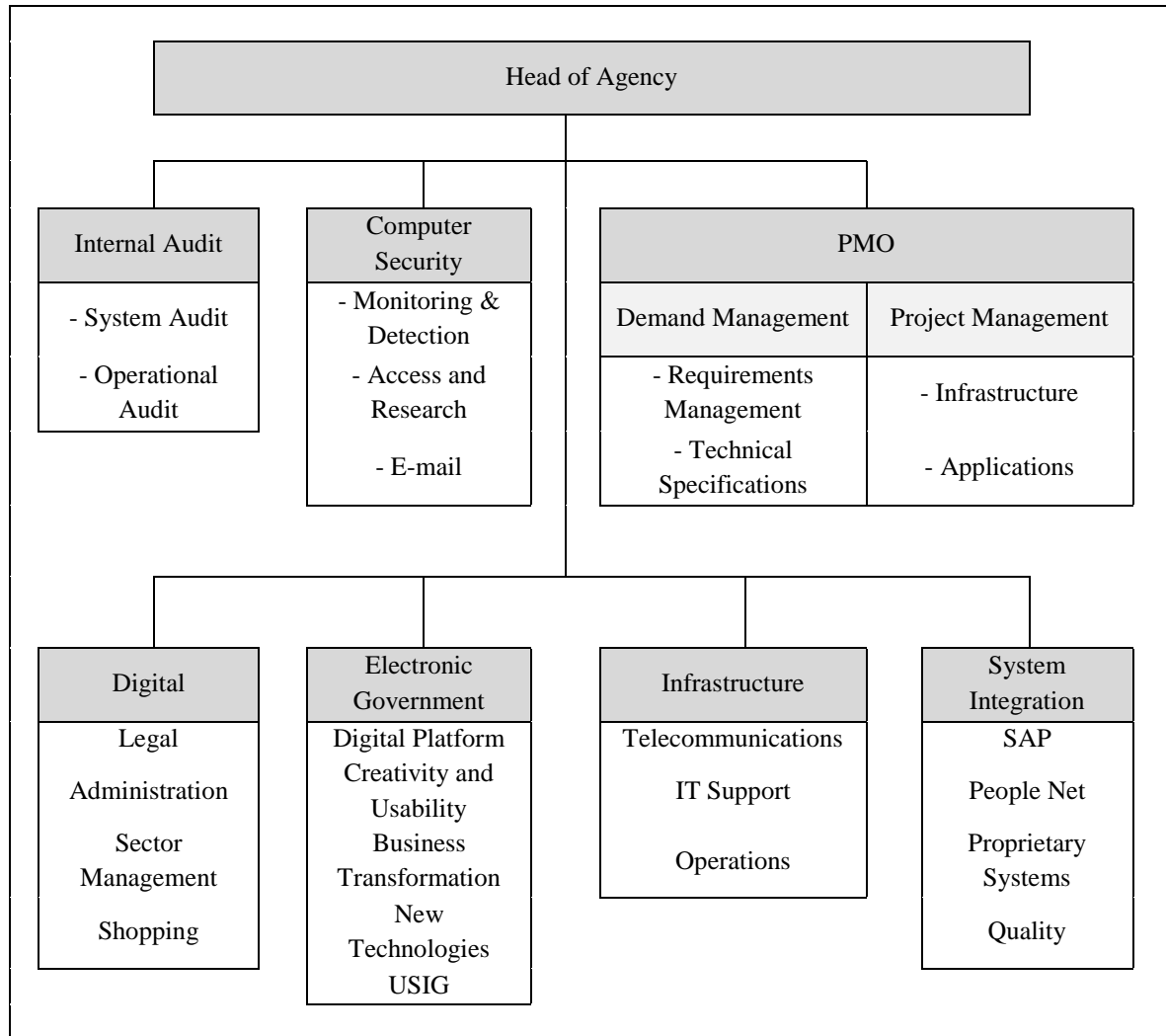
In terms of citizen`s service satisfaction

- Engineering: Planning GCABA Network and telephony services. Design solutions.
- Operations: MONITORING, diagnostics and troubleshooting.
- Facilities: Implementing and field service links. Maintenance of facilities.

3.4 Organization Process

The organization of Information System Agency in the city of Buenos Aires is as follows.

Table III-7 ASI detail organization chart



Resource status of Information System Agency is composed of 7 groups, which are Developers, Functional Analysts, Technical Analysts, QA, Geographers and SAP Consultant. Between them, nearly half of the personnel are third-party employees.

Table III-8 Consist of human resources

Resources according to Profile	SR / SSR	JR.	ASI ⁶ (1)	Third (2)
Developers	10	10	20	12
Functional Analysts				4
Technical Analysts	4		4	
QA	3	4	7	
Geographers	2	4	6	
SAP Consultant	1	2	3	4
BI Analyst / Data mining		2	2	2
Graphic Designers	8	2	10	
Application Architect	1		1	3
Total	29	24	53	25

4. Implication

According to TA cheater, the infrastructure and management capability of IT is such a well organized by city government. The ordinary e-Government service is already provide by city government and citizen`s behavior is also very oriented in the IT enviorment. Thus, the city government is planning to extention ‘better administration’, ‘Human resource effciently’, and ‘Smart city’ for prepared new generation. The city of Buenos Aires seems does have any constraint to start for new generation.

IV. Legislation and Regulation Analysis (LA)

1. Overview

Legislation and Regulation in the city of Buenos Aires provides citizens with the right to communicate, seek, impart and receive information freely and also to express their views and ideas through any media. In particular, according to Article 28 of the law No. 1845 on the Protection of Personal Data, the city of Buenos Aires pursues the creation of a platform for citizen access to public information, while ensuring statements public rights and respecting the principles of transparency, participation and collaboration in public administration.

2. Legal/Regulatory Analysis

2.1 Legal/Regulatory Context

According to the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights and the American Convention on Human Rights, the Constitution of the Autonomous City of Buenos Aires and the Laws No. 104, No. 1845 and No. 4013, Decree No.

⁶ ASI stands for Information System Agency

660/11 and its amendments Decree No. 122/12, File No. 380159/2012, the law related to information technology in the city of Buenos Aires is as follows.

Table IV-1 Information technology legal description

<p><i>The full text:</i></p> <p><i>That the right of access to public information and correspondence with the freedom of expression of the person are expressly recognized in various international human rights instruments, with constitutional in light of Article 75 inc. 22 of the Constitution, and as such fully applicable in the jurisdiction of the City of Buenos Aires;</i></p> <p><i>That the Constitution of the Autonomous City of Buenos Aires text enshrines the principle of publicity of the performance of government by expressly, in Article 1, that "all acts of government are public";</i></p> <p><i>That complementing such provision, Article 12 inc. 2 guarantees citizens the right to communicate, seek, impart and receive information freely, and also to express their views and ideas through any media and without any censorship;</i></p> <p><i>That, furthermore, Article 53 in fine of the Local Constitution states that "all acts involving resource management are public and disseminated without restriction";</i></p> <p><i>That in relation to the responsibilities of the Executive in the matter, Article 105 inc. 1 establishes that Mr. Head of Government: "devise the best means to make available to the public all information and documentation pertains to the management of City Government";</i></p> <p><i>That, in turn, Law No. 104 of Access to Information recognizes the right of every person, in accordance with that principle of publicity of government, to receive complete, accurate, appropriate and timely, of any body belonging to the public service of the City of Buenos Aires, on administrative activity;</i></p> <p><i>That also sets the standard scope of this right when he said that "the information must be provided in written documents, photographs, recordings, magnetic or digital or any other format that has been created or obtained by the executing authority which is in his possession and under his control ";</i></p> <p><i>That Article 3 of the said Act sets limits on access to information, determining among themselves those cases whose request for information affecting the right to privacy and protection of personal data;</i></p> <p><i>That the right to privacy is recognized as the right to a sphere of individual autonomy constituted by feelings, habits and customs, family relationships, economic status, religious beliefs, physical and mental health and, ultimately, actions, facts or data, taking into account the forms of life accepted by the community, are confined to the individual, and that knowledge or disclosure by strangers means a real potential danger to privacy;</i></p> <p><i>That, in turn, personal data protection is a right of the individual control over their own data and includes, among other things, the citizen opposition to certain personal data being used for purposes other than that justified his obtaining legitimate ;</i></p> <p><i>That within the scope of the "liberty computing", it shall be identified with the individual's right to control their data embedded in a computer program, in full accordance with the Institute of</i></p>
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habeas data referred to in Article 43 of the Constitution National, Article 16 of the City Charter, and Article 28 of the Law No. 1845 on the Protection of Personal Data;

That locally, the Law No 1845 guarantees protection of personal data relating to individuals or ideal existence, or intended to be settled in files, records, databases or public sector data City Buenos Aires;

That considering technological advances achieved in this effort, it is appropriate to determine the conditions necessary to operationalize the figure of Open Government, through the creation of a platform for citizen access to public information, while ensuring statements public rights, and respecting the principles of transparency, participation and collaboration in public administration;

That in order to further guarantee the aforesaid rights, and under this administration progressive advances in incorporating technology into their management processes, it is appropriate to implement a policy to facilitate citizen access to public information the City Government, in full accordance with the guidelines applicable to this subject;

That with regard to the incorporation of technological tools to the local public administration, the current Ministerial Law No. 4013 provides, in Article 26 that "The Ministry of Modernization [...] 14. Design, coordinate and monitor, in conjunction with the Cabinet of Ministers, the policy implementation of Electronic Government and Information Technology for the Executive ... ";

That most of the above, the Ministry of Modernization corresponding aims to "design, propose and coordinate policies of transformation and modernization of the state in the various areas of government, determine the strategic guidelines and the proposed regulatory standards matter ", and" define and implement the Plan for Modernization of Public Administration of the Government of the Autonomous City of Buenos Aires and act as enforcement authority thereof ";

They also said Unit Ministerial responsibility is to "design and implement integration policies and improvement of processes, technologies, infrastructure and management systems and technologies, the Government of the Autonomous City of Buenos Aires";

That the date of enactment of the Law on Ministries, and through its Regulatory Decree No. 660/11, Mr. Head of Government approved the new administrative organization of the Government of the Autonomous City of Buenos Aires, created within the Ministry of Modernization the Directorate General of Information and Open Government;

That the adoption and implementation of a proactive policy on access to information is an essential step towards open government closest to the people, helping to realize the ideals of transparency, participation and collaboration in the context of decision-making, implementation policy, management monitoring and evaluation of results;

That as international experience shows, commissioning availability of public sector information in appropriate conditions for reuse is a catalyst for civic innovation and the development of local industries based on knowledge, thus propelling progress levels social, cultural and economic development;

That within this framework, the said General Directorate of Information and Open Government has, among its primary responsibilities, that of: "... develop a database of open access which provides updated information on all areas of government ...";

That in accordance with the foregoing, it is appropriate that this platform datasets expose those public sector contribute to better promote transparency, encourage participation and collaboration of citizens in government affairs, and stimulate innovation and development social, economic and cultural development in the area of the City of Buenos Aires;

An initiative of such characteristics is no stranger to the policies implemented by other modern authorities in this area, in line with efforts by cities like Washington DC, Montevideo, San Francisco, Vancouver, New York, Toronto, Seattle and London, among others, whose local governments are implementing policies related to open data herein;

That attribution based on their competence, detailed above, and for the purposes of an orderly and coordinated implementation of the initiative described, it is necessary to empower the Ministry of Modernisation to define and implement policies, platforms, standards and protocols designed to promote the use, sharing and reuse of public data;

That in accordance with the above, it is appropriate to determine that the information available through this platform is guided by the principles and standards accepted in open data, including the publication of data sets in a complete, primary, timely, actionable electronically, under terms and licenses do not restrict their possibilities for reuse, and full compliance with the safeguards and regulations on access to information and protection of personal data;

That same sense, it should instruct the Ministers, Secretaries and other Executive Branch departments to identify, adapt and publish their data sets through such stage, as the policies, standards and protocols established by the Ministry of Modernization .

HEAD OF GOVERNMENT OF BUENOS AIRES DECREES

Article 1. -Implemented data.buenosaires.gob.ar site as a platform to facilitate the search, discovery and access to those data sets in the public sector to help promote transparency, encourage participation and collaboration of citizens in government affairs, and encourage innovation and social, economic and cultural development in the area of the City of Buenos Aires.

Article 2. - Encomiéndase the Ministry of Modernisation of the Government of the City of Buenos Aires to establish the necessary measures to comply with the preceding article, as well as the development and implementation of policies, standards and protocols designed to promote access redistribution and reuse of public data in accordance with the guarantees in force concerning Access to Information and Protection of Personal Data.

Article 3. - Ministries, Departments and other Executive Branch departments identify, within their respective spheres, those data sets eligible for publication in the said platform, pledging to maintain adequate and timely under the guidelines set by the Ministry of modernization

Section 4. - This decree is countersigned by the Minister of Modernization and Mr. Head of Cabinet of Ministers.

Article 5. - Give yourself the Register, published in the Official Gazette of the City of Buenos Aires, contact all the Ministries and Departments of the Executive Branch, all dealings with

rank or equivalent, to the Attorney General of the City of Buenos Aires, to the Inspector General of the City of Buenos Aires and the decentralized agencies of the Government of the City of Buenos Aires. Fulfilled, filed.

2.2 Current Policies and Plans

Porteña⁷ Citizenship Program "rightfully" was created by Act 1878 of the Legislature of the Autonomous City of Buenos Aires and became operational in November 2005. Its overall objective is to reduce the levels of inequality in the Autonomous City of Buenos Aires. To achieve this, a monthly subsidy needs to be provided, which improves household income in poverty or indigence. The grant comes through a magnetic card issued by the Bank and preloaded by City and Cabal, is used only for the purchase of food, cleaning and personal hygiene products, school supplies, and fuel for cooking, and is subject to compliance with beneficiary households in education and health obligations.

So far there were two operating Registration November / December 2005 and 20 March to 3 April 2006, widely disseminated through the CGP community, the media and other institutional channels of information.

During registration, the candidates showed benefit documents, certificates attesting identity, affiliation, health, education, all household information, and a completed Benefit Request Sheet

Since the program favors women as holders of the benefit, the application process should be done by women over 18 years of a head or a spouse of a family.

When households whose members age 18 at the time of registration Argentina lacked documentation to the Program conducted a registration, the registration process is completed when regularized their immigration status, and the same happens with the other members of the household, that to be including the application must have begun to process document attesting Argentine identity. Patria Grande Program streamlined the process for people born in the countries of MERCOSUR and Associated States. With the Argentine DNI Credential or temporary residence, these homes complete the application process and can process the benefit CUIL in ANSES, indispensable to manage the City Bank account in which the subsidy credited Porteña Citizenship.

In order to contribute to the articulation of social policies implemented an instance Citizenship Porteña additional enrollment for former City Voucher Program beneficiaries. Those who did not have documentation Argentina were completing registration as received their ID card or temporary residence Credential.

Notification of the results of the assessment to the registered

⁷ A person who is from or lives in a port city, but it can also be used as an adjective for anything related to those port cities. The largest city to which the term is commonly applied is Buenos Aires, Argentina

After the registration process, Argentina conducted the evaluation process and selection of beneficiary households. The evaluation results were published in the Attendee Check, subportal and patterns that were available in the community and CGP City Sports Center.

Operative Delivery Card Purchase

Delivering the Purchase Card Program to their holders is organized in three major operations: the first and the second took place at the headquarters of Correo Argentino and the third in the City Bank.

Commitment Letter

To remove the card, recipients must sign a Letter of Commitment to the program in which explicitly assume the following obligations:

Perform health checks of pregnant women, children and adolescents in the home.

Ensure school attendance of all children and adolescents aged 5 to 18 years (inclusive) of the home, no exceptions.

Provide true information on the composition and condition of the home and its members, as well as changes that may arise: death, departure of one of the members of the family unit, imprisoned members, births, etc.

Do not omit information or falsify documents or certificates requested by the program.

Make proper use of program resources.

Meet standards prohibiting child labor in its various forms.

Attend meetings called by the program.

The text also states that Citizenship Porteña is incompatible with any type of recruitment (direct or indirect) in any of the offices of the City Government.

Since the Commitment Letter has an affidavit, breach of commitments can generate the partial or total suspension of the benefit.

3. Institutional Analysis

3.1 Institutional Structure

- Cabinet of Ministers Chief

Figure IV-1 Organization of cabinet of ministry chief

Sector	Sub Division	Sub Division
Cabinet of Ministers Chief	Transport	- Transit - Transportation - Licenses -Road Safety - Bodies of Traffic Enforcement Agents and Transport - Healthy Mobility
	Planning, Management and Control	- Management Control - Spending Assessment - Strategic Planning
	Human Rights and Cultural Pluralism	- Coexistence in Diversity - Attention and Victim Assistance - Communities
	Public Affairs	- Watchdogs Tracking and Access to Information - Coord. Policy Management and Institutional Relations
	Under direct	Tecnica, Adm, and Legal

- Ministry of Finance

Table IV-2 Organization of ministry of finance

Sector	Sub Division	Sub Division
Ministry of Finance	Management and Financial Administration	- Insurance - Treasury -Automotive Fleet Maintenance - Accounting - Economies and Management Services Non-Tax Resources
		- Fiscal Relations - Office for Public Management and Budget - Financial Adm. Computer Unit - Public Credit
	Operational Management	- Procurement and Contracting - Price Redetermination - Administrative Processes
	Under direct	Administrative and Legal Technical

- Ministry of Justice and Security

Table IV-3 Organization of ministry of justice and security

Sector	Sub Division	Sub Division
Ministry of Justice and Security	Crime prevention and community relations	- Crime Prevention Policy - Technical, Administration and Legal - Research and Technologies. of information

Feasibility study on Smart Citizen Service HUB (AIO) with Smart Card

In terms of citizen`s service satisfaction

	Public Safety	- Private Security - Custody and Security GCABA Assets
	Emergency	- Logistics - Guard Auxiliary and Emerg. - Civil defense
	Justice	- Electoral - Justice and MediAc Register - Administ. Violations
	Administ. Metropolitan Police	- Administ. Legal and Metropolitan Police - Administ. HR of Police Metrop. -SUPPLIES. the Metropolitan Police - INFRAEST. Metropolitan Police

- Ministry of Education

Table IV-4 Organization of ministry of education

Sector	Sub Division	Sub Division
Ministry of Education	Educational Management and Coord. pedagogical	- Private Management Education - State management Education - Higher Education
	Management Econ. Financ. and Admin. Resources	- Management Planning and Control - Resource Management - School Infrastructure - Services to Schools - Maintenance Management
	Education Policy and Teaching Career	- Teachers and Teaching - Teaching Career
	Education Equity	- Strategies for Educability - Strengthening Educational Community
	Under direct	- Legal and Institutional Coordination - Educational Planning - Communications and Institutional Relations - Educational Technology - Evaluation of Educational Quality

- Ministry of Culture

Table IV-5 Organization of ministry of culture

Sector	Sub Division	Sub Division
Ministry of Culture	Cultural heritage	- Art Education - Infrastr. and Building Maintenance - Books, Libraries and Reading Prom
	Cultural management	- Cultural Promotion - Music -Institutional Relations and Community
	Tourism	-Technical, Admin. and Legal
		- Museums - Casco History - Heritage and Historical Institute

- Ministry of Social Development

Table IV-6 Organization of ministry of social development

Sector	Sub Division	Sub Division
Ministry of Social Development	Administration	- Infra. Social - Technical Administration and Legal
	Family and Community Strengthening	- Citizenship Portena - Social Economy - Immediate Attention
	Third Age	- Promotion and Services - Promoting Active Aging
	Social Promotion	- Civil Society Strengthening - Zonal Social Services - Children and Adolescents - Women - Addictions Social Policy

- Ministry of Modernization

Table IV-7 Organization of ministry of modernization

Sector	Sub Division	Sub Division
Ministry of Social Modernization	Human Resource Management	- Liquidation of Assets Management - Labor and Social Affairs - Administration of Occupational Medicine - Assessment and Staff Development - Operations and Technology
	Management Modernization Project	- Smart City Projects - Administrative Modernization - Human Capital - Career Planning - Information and Open Government - Integral Process Management
	Under direct	- Management Planning and Control - Technical and Administrative - Developments for the Management of Communication - Structures of Government and Labor Relations - Legal and Institutional Management

3.2 Core Activities

- Cabinet of Ministers Chief

Cabinet of Ministers is a political office which can give the neighbor strategic plans, guidelines, project management and control, and other issues of interest, in response to consultations on governance.

The technology provides unique tools for the exchange of information and the website provided from Buenos Aires city government is one of the many channels through which the city government communicates with citizens. From here, Buenos Aires city government presents the responsibilities of the Chief of Cabinet and its component areas.

Among the various activities taking place, the Cabinet Office is responsible for coordinating the development of the governmental programs; and each ministry defines specific objectives of the respective areas, assisting the Head of Government in monitoring plans, making the management of government control and design, proposing and coordinating policy transformation and modernization.

The Cabinet of Ministers assists the Head of Government in all its inherent powers and all that this may delegate, in accordance with the objectives set out in the regulations.

- Ministry of Finance

Ministry of Finance presents the different investment statements containing the consolidated financial statements of the period of the autonomous city of Buenos Aires such as the municipality of the city of Buenos Aires, for the years indicated.

- Ministry of Justice and Security

Ministry of Justice and Security is to assist the Head of Government in all its powers. According to Article 17, the role of Ministry of Justice and Security is set out as follows.

Table IV-8 Article of Role of misinstry of justice

<p>Article 17</p> <p>1 - Develop and implement policies to ensure the conditions for the exercise of the rights of individuals.</p> <p>2 - Participate in the formulation and implementation of policy through which integrally exercise police power in the area of the City Buenos Aires.</p> <p>3 - Design strategies and policies concerning a metropolitan Security System according to the Constitution and Laws of the Autonomous City of Buenos Aires and established nationally.</p> <p>4 - Promote programs and projects policies regarding Public Safety and Crime Prevention under the Metropolitan Council Complementation Internal Security.</p> <p>5 - Plan, organize, direct and control strategies, policies and actions related to the prevention, investigation of crimes and misdemeanors.</p> <p>6 - Implement and update systematically the crime map of the City of Buenos Aires.</p> <p>7 - Establish, implement and maintain relationships with the police and security forces.</p> <p>8 - Participate in formulating and implementing policy control compliance with the rules governing the provision of the surveillance, custody or private security.</p> <p>9 - Promote policies of enforcement of traffic rules in coordination with the police and security forces operating in the jurisdiction, in coordination with the Ministry of Urban Development.</p> <p>10 - Participate in the formulation and implementation of policy monitoring and safekeeping of buildings owned or used by the Government of the Autonomous City of Buenos Aires.</p> <p>11 - Implement policies to ensure safety in public performances.</p> <p>12 - Establish community assistance to social emergencies, disasters and accidents.</p> <p>13 - Design and implement policies to assist victims of crime and abuse of power, to the detriment of their human rights.</p> <p>14 - Implement a coordinated and emergency only.</p> <p>15 - Understand the enforcement of standards relating to the management of public space in coordination with the Ministry of Public Space.</p> <p>16 - Coordinate and articulate relations with the judiciary.</p> <p>17 - Understand registration activities that make the objectives of the Ministry.</p> <p>18 - Oversee the operation of the Administrative Unit Care and Control Faults and tasks related to the payment of offences which may be resolved administratively.</p> <p>19 - Implement policies regarding empowerment conductors.</p> <p>20 - Promote actions related to community mediation and alternative dispute resolution.</p> <p>21 - Participate in the formulation and implementation of policy regulating the acquisition and maintenance of the fleet belonging to the Government of the Autonomous City of Buenos Aires.</p>
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- 22 - Implement the procedure for the nomination of candidates for judges of the High Court of Justice, Attorney General, Advocate General and General Counsel Guardian.
- 23 - Exercise the comptroller and the police power by applying specific rules in matters of ratings, safety, hygiene, food safety and sanitation.
- 24 - Control the execution of public and private works in the area of the Autonomous City of Buenos Aires.
- 25 - Implement policies, plans and programs for the control of economic activities.
- 26 - Organize technical structures and implementation of the elections, the financing of political parties and institutions of participatory democracy, both in the City and in the Communes.
- 27 - Understand the design of Reform District policy and coordinate the organization, operation and financing of political processes, and institutions in the Autonomous City of Buenos Aires.
- 28 - Coordinate the Security Council and Crime Prevention and the Committee for Prevention and Safety at Sports.
- 29 - Understand the design and implementation of prison policy.
- 30 - Coordinate actions to promote and monitor the transfer of the national Justice area of Buenos Aires.

- Ministry of Education

Ministry of Education is to ensure access to knowledge and cultural practices, and experiences relevant to the performance of the whole person. It aims to ensure that students have mastery of the tools necessary to continue their learning beyond the education they receive.

In addition to practice Language, Mathematics, Natural Sciences and Social Sciences, school students learn Plastic, Technology, Music, and Physical Education from grade 4, incorporated with a Foreign Language.

In some places there are degrees of leveling and acceleration that support full educational inclusion of children who have never attended school or been overaged.

- Ministry of Culture

Ministry of Culture connects areas that correspond to the secretariat for cultural management with personnel in the orbit of the secretariat of cultural heritage.

- Ministry of Culture has committed to:

Design policies to preserve the architectural and urban heritage of the city.

Accompany and supervise the policies and strategies inherent in the conservation and rehabilitation of the historic City.

- Accompany and monitor policies related to the City Libraries.
- Accompany and monitor policies related to the City Museum.
- Coordinate, organize and implement the agreements arising from the Program for the Conservation of Cultural Heritage (PROCOPAC).
- Develop policy and action plan for the integration and training in rehabilitation and conservation of cultural heritage.
- Design and implement policies for education by and for art.
- Design and conduct policies to promote cultural participation by socio-cultural programs, projects, events, seminars, cultural conventions, contests and craft fairs.
- Ministry of Social Development

Ministry of Social Development is to care for people and families living in social risk, affected by emergencies or violated rights and, in general, people on the streets in need of guidance, information, and advice on social services. Beneficiaries are singles and families in social risk condition who are on the streets or affected by other social emergencies.

- Ministry of Modernization

The Ministry of Modernisation assists the Head of Government in the design, coordination, analysis and implementation of new policies for transformation and modernization.

According to Section 26, -it is for the Ministry of Modernization, assisting the Head of Government in all its powers inherent in accordance with the objectives set out as below:

- Design, propose and coordinate policies transformation and modernization in different areas of government, determine the strategic guidelines and the proposed regulatory standards in the field.
- Define and implement the Plan for Modernization of Public Administration of the Government of the Autonomous City of Buenos Aires and to exercise like authority of application.
- Analyze and approve modernization measures proposed by the ministries for incorporation into the Plan for Modernization of Public Administration of the Government of the Autonomous City of Buenos Aires.
- Develop and implement, in conjunction with the corresponding jurisdictions, policies to improve administrative, financial and functional bodies and agencies of the Government of the Autonomous City of Buenos Aires.
- Design and implement management policies and human resource management of the Government of the Autonomous City of Buenos Aires.
- Design, implement and monitor, jointly with the Ministry of Finance, the application of the wage policy of the Government of the Autonomous City of Buenos Aires.
- Analyze proposals of ministries and propose improvements to the design of functional organic structure of the Executive Branch of the Government of the Autonomous City of Buenos Aires.
- Develop and execute, in conjunction with the Ministry of Finance, the agreements reached in collective bargaining with union representatives and each of the ministries or areas involved.
- Design and implement training policies for staff and officials of the Government of the Autonomous City of Buenos Aires.
- Design and implement administrative careers and the management regime, or any special arrangements, under the provisions of Law 471, Labor Relations in the Public Administration of the Autonomous City of Buenos Aires.
- Supervise and coordinate the development of human resources and individual ranks, in cooperation with local government and agencies of the City of Buenos Aires,
- Participate with the Ministries of Education and Health, to develop proposals for improving the teaching profession and the health career.
- Design and implement integration policies and improvement of processes, technologies, infrastructure, and management systems of the Government of the Autonomous City of Buenos Aires.
- Design, coordinate and monitor, in conjunction with the Cabinet of Ministers, the policy implementation of e-Government and information technology for the Executive Branch.
- Coordinate and monitor the implementation of information systems and telecommunications of the Government of the Autonomous City of Buenos Aires, as overseeing the operation of the Information Systems Agency.

- Design policies to integrate databases of georeferenced Government of the Autonomous City of Buenos Aires.

3.3 Communication

Currently, the list of agencies related to this project is: Cabinet of Ministers Chief, Ministry of Finance, Ministry of Justice and Security, Ministry of Education, Ministry of Culture, and Ministry of Social Development. Communications among related agencies are being activated, and correspondingly, the physical operation team will be formed at a later time.

3.4 Challenges

- Ministry of Justice and Security

The challenges in Ministry of Justice and Security is to promote the use of technology in order to achieve integrated information systems, communication networks, and elements for an efficient monitoring and making urban risk map with updated information on crime rates. Furthermore, it provides policy coordination of government that incorporates the active participation of various community organizations.

- Ministry of Education

Ministry of Education pursues the way to innovation in teaching and learning processes in the context of the challenges posed by the new digital society model.

It is part of the Digital Education Comprehensive Plan , an initiative of the Ministry of Education of the City of Buenos Aires whose main objectives are to promote quality education with equal opportunities and possibilities, and promote social and educational inclusion.

- Strategy and Training
- Collaborative Digital Platform (Integrate)
- Technology Infrastructure

- Ministry of Culture

Ministry of Culture aims for the development of programs and actions to create, promote and expand opportunities for collaboration and joint activities between private sector and public sector, NGOs and related, and the Secretariat.

Companies and NGOs work together with other companies and NGOs to develop sponsorship programs and / or inter-agency cooperation that best suit their specific needs CSR, exposure and positioning trademark.

PR and events agencies provide advice in finding suitable spaces for holding events. Production filmográficas provide advice in finding locations for material and conducting documentary films and / or commercial.

- Ministry of Social Development

Ministry of Social Development has its mission as to promote public policies to guarantee a decent life for people living in the City. Development of this action is aimed at the inclusion of the most disadvantaged sections of our society, promoting their development as individuals and as citizens.

The Secretariat is aiming to build a concept of citizenship whose main axes are inclusion, community involvement and commitment of all stakeholders to the common good; citizens to defend their rights and their responsibilities; citizens active and engaged with the problems of their neighbors, their neighborhood and their city. That is building citizenship is to reverse the impoverishment and degradation suffered by society for decades, which requires a long process of regeneration of social ties, a new consensus, and above all a strong commitment to work and tasks that present the reality.

- Ministry of Modernization

The work plan of the Ministry of Modernization includes all initiatives and actions aimed at GCBA Modernization, whether conducted directly from the Ministry (transverse) or developed and implemented in conjunction with other ministries (vertical). In order to maximize the integration, process development and incorporation of new technologies are required.

It is based on four cornerstones:

- Human Capital
- Administration modernization
- Information and Open Government
- Smart City

4. Implication

The city of Buenos Aires only has the e-Government Act compared with other 2 countries- Mongolia, Tanzania- which is involved in this project. Alos, the municipal government of Buenos Aires is operating independently in the Reublic of Argentina. It means that will by city government is strongly effect to the new challenge for preparing the new generation. In terms of law and regulation, there are no any constraints for Smart Citizen Card project.

V. Benchmarking

1. Overview

Two case studies were chosen, Centrelink Health Care Card of Australia and T-money of Korea, which are similar to AIO card in terms of the process or technical architecture.

The first case is Centrelink Health Care Card which provides help with cost of prescription medicine under PBS (Pharmaceutical Benefit Scheme), Australian government funded medical services, and access to state, territory and local government concessions.

Health Care Card is willing to give residents concession on health-care costs. Thus, purpose and process of Health Care Card is similar to those of AIO Card, in terms that they are willing to provide benefits to residents and enhance the efficiency of management. .

The second case is T-money which is a rechargeable series of cards and other "smart" devices used for paying transportation fares in and around Seoul and other areas of South Korea.

T-money is also All-in-One Card.

T-money card can be regarded as an all-in-one transportation card. It works with the Seoul subway system, the express buses, standard buses, local buses and Korail train system. Its universal coverage makes it a benefit for anyone coming into South Korea for business or pleasure. It can be even used in lieu of cash or credit cards at some local businesses.

2. Case Study

2.1 International Case 1 (Centrelink Health Care Card)

- What's Health Care Card

Health Care Card provides help with the cost of prescription medicine under PBS, Australian government funded medical services, and access to state, territory and local government concessions.

Having a Health Care Card will give residents concessions on health-care costs. This means they can get cheaper prescription medicines through the Pharmaceutical Benefits Scheme and medical services funded by the Australian Government.

This card can also give residents access to various other concessions provided by State and Local Governments as well as some private businesses, including household, education, and public-transport costs.

If they are receiving certain Centrelink payments or supplements for the maximum rate of Family Tax Benefit, they will automatically receive a Health Care Card. Partners and children of the cardholder may also be covered by the card.

Not all card types receive same concessions, and the concessions available to cardholders may be different between States and Territories.

Figure V-1 Illustration of health care card



*HealthCare Card issued from September 2012

- Residency requirements for a Health Care Card

To receive a Health Care Card, there are specific requirements to meet.

- living in Australia
- Either an Australian resident or a New Zealand citizen holding a special category visa

Those who want to receive Health Care Card also need to meet a two-year newly-arrived resident's waiting period. If they want to be exempted from this requirement, they are to be a refugee or the partner of an Australian citizen.

If they leave Australia permanently and have a Health Care Card, the card will be cancelled on their departure.

If they leave Australia temporarily, their card will stay current for up to 13 weeks—as long as they continue to be entitled to the card.

- Benefits of a Health Care Card

A Health Care Card entitles them to cheaper prescription medicines under the Pharmaceutical Benefits Scheme and to various concessions from the Australian Government.

These benefits could include:

- bulk billing for doctor's appointments (this is your doctor's decision)
- more refunds for medical expenses through the Medicare Safety Net
- assistance with hearing services through the Office of Hearing Services
- discounted mail redirection through Australia Post

Some of these Australian Government concessions may be provided for a dependent child.

State and Territory Governments and local councils may offer concessions, such as:

- energy and electricity bills
- health-care costs, including ambulance and dental and eye care
- public-transport costs
- rates

Concessional entitlements may vary between States and Territories. So, those who want to receive these concessions must check with their State and Territory Government regarding which concessions are available to the subjected Health Care Card holders.

- Types of Health Care Card

Having a concession or health care card entitles you to cheaper health care services and cheaper medicines. For example, they will receive a higher Medicare benefit for medical services through the Medicare Safety Net and lower cost medicines under the Pharmaceutical Benefits Scheme (PBS).

There are different types of concession and health care cards. The type of concession or health care card you can claim will depend on:

- the type of income support payment you receive
- your age
- whether you have dependants
- Other requirements.

Their partner and children may also be covered by the card if it relates to an income support payment.

If they can't show their Medicare or concession card to the pharmacist, they may have to pay the full price for their PBS medicine.

If this happens, ask the pharmacist for an official pharmacy receipt (not the regular docket). Health care card holders may be able to get a refund by taking their official pharmacy receipt to a DHS Service Centre. They will need to show their Medicare card and concession card or fill out a Patient Claim for Refund form and post it with their official pharmacy receipt to PBS Processing Centre GPO Box 9826 in their capital city.

There are 6 types of health care cards categorized by eligibility and benefit.

Table V-1 Type of health care

Types	Eligibility	Benefit
Commonwealth Senior Health Card	Those who meet the residence requirements not be subject to a newly arrived resident's waiting period Those who have reached age pension age but not qualify for a payment from us or the Department of Veterans'	Commonwealth Seniors Health Card entitles them to discounts on Pharmaceutical Benefits Scheme (PBS) prescription medicines. They can get a discount or concession on: Bulk-billed doctor appointments, at the

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	<p>Affairs</p> <p>Those who provide us with your and their partner's tax file numbers, or be granted an exemption from doing so, and</p> <p>Those who have an annual adjusted taxable income of less than:</p> <ul style="list-style-type: none"> - \$50 000 (singles) - \$80 000 (couples, combined), or \$100 000 (couples, combined, for couples separated by illness or respite care or where one partner is in prison). <p>*This limit is increased by \$639.60 for each dependent child you care for.</p>	<p>discretion of the doctor</p> <p>Cheaper out-of-hospital medical expenses through the Medicare Safety Net</p> <p>Concessional rail travel on Great Southern Rail services, such as The Indian Pacific, The Ghan, and The Overland</p> <p>In some instances, extra health, household, transport, education, and recreation concessions that are offered by state or territory and local governments and private businesses.</p>
Ex-Carer Allowance Health Care Card (caring for a child under 16 years)	<p>Those who are between 16 and 25 years of age</p> <p>Full-time student</p> <p>Receiving a Carer Allowance Health Care Card on the day before they turned 16 years of age</p> <p>Australian resident living in Australia not newly arrived resident's waiting period</p>	<p>The Ex-Carer Allowance (Child) Health Care Card entitles them to cheaper medicines under the Pharmaceutical Benefits Scheme. Concessions may vary by state and territory</p>
Foster Child Health Care Card	<p>A foster carer or a person caring for another person's child. They do not need to be a formal foster carer (for example, caring for a ward of the state) to be eligible for the Foster Child Health Care Card.</p> <p>Anyone, such as a grandparent, sibling or aunt, who is caring for a child that is not their natural or adopted child, is an informal foster carer and may be eligible.</p> <p>The foster child must be living in Australia with an Australian resident or a special category visa holder.</p>	<p>A Foster Child Health Care Card gives foster carers access to cheaper medicines and some other concessions for foster children under their care. The card is not subject to an income or asset test.</p> <p>The Foster Child Health Care Card enables foster carers to purchase Pharmaceutical Benefit Scheme (PBS) medications at reduced costs for foster children and may entitle the foster children to other concessions offered by state or territory organizations.</p>
Low Income Health Care Card	<p>Those who receive low income</p> <p>Those who meet the Low Income Health Care Card income test.</p> <p>If they are a Student or Australian Apprentice and receive Youth Allowance, ABSTUDY or Austudy, they will not automatically receive a Health Care Card but may still qualify for a Low Income Health Care Card.</p>	<p>Cheaper medicines under the Pharmaceutical Benefits Scheme</p> <p>Concessions offered by private companies</p> <p>State and territory government and local council concessions, such as:</p> <ul style="list-style-type: none"> energy and electricity bills health-care costs, including ambulance and dental and eye care public-transport costs water rates <p>If they have a Low Income Health Care Card and share the care of a child, their child's name will be listed on your Health Care Card if the amount of shared care is at least 14 percent of the time (two or more nights per fortnight).</p>
Medicare Card	<p>Everyone who lives in Australia—excluding Norfolk Island residents—is eligible for a Medicare card if they:</p> <ul style="list-style-type: none"> hold Australian citizenship hold New Zealand citizenship (documentation required) 	<p>You use your Medicare card when:</p> <ul style="list-style-type: none"> making a Medicare claim for a paid or unpaid doctor's account visiting a doctor who bulk bills getting treatment as a public patient in a public hospital

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	<p>have been issued with a permanent visa have applied for a permanent visa (excludes an application for a parent visa—other requirements apply.). If they are aged 15 or older, you can get your own Medicare card. Children under 15 can be listed on their parents' card. Visitors to Australia from a country that has a Reciprocal Health Care Agreement with Australia are also eligible for medically necessary treatment.</p>	<p>filling a Pharmaceutical Benefits Scheme prescription at a pharmacy</p>
<p>Pensioner Concession Card</p>	<p>Age Pension Bereavement Allowance Carer Payment Disability Support Pension Newstart Allowance or Youth Allowance (job seeker) if you are single, caring for a dependent child, and looking for work Parenting Payment (single) They may also get a Pensioner Concession Card if they are aged over 60 and have been receiving other certain income-support payments for nine months or more.</p>	<p>They may also be entitled to various concessions from the Australian Government. These could include: bulk billing for doctor's appointments (this is your doctor's decision), more refunds for medical expenses through the Medicare Safety Net, assistance with hearing services through the Office of Hearing Services, discounted mail redirection through Australia Post. They may get some of these Australian Government concessions for a dependent child. They may also be entitled to various concessions from state and territory governments and local councils—these could include: reductions on property and water rates, reductions on energy bills, reduced fares on public transport, reductions on motor-vehicle registration, free rail journeys. Pensioner Concession Card concessions are different in each state and territory and vary between local councils.</p>

2.2 International Case 2 (T-Money)

2.2.1 What's T-money

T-money is a rechargeable series of cards and other "smart" devices used for paying transportation fares in and around Seoul and other areas of South Korea. T-money can also be used in lieu of cash or credit cards in some convenience stores and other businesses. The T-money System has been implemented and is being operated by Korea Smart Card Co., Ltd of which 34.4% is owned by Seoul Metropolitan City Government, 31.85% owned by LG CNS, and 15.73% owned by Credit Card Union.

T-money is pre-paid RF smartcard embedded with CPU to enable self-calculation. T-money enhanced card's security by applying international and national security algorithm, and is enlarging its various services to all parking fees, tunnel fees and more. Also, T-money is

introducing new payment media (mobile phone, accessory, watch, USB, etc), and will keep on increasing various value-added services.

2.2.2 Benefits of T-money

- Benefit to Citizens:
 - Service Upgrade
 - Increasing convenience in purchasing by expanding transportation service and affiliates(convenience stores, museums, theaters, parking lots, vending machines, and more)
 - Utilizing 24hr-operated convenience store for immediate recharge and refund service
 - Improvement in security
 - Upgrade in service quality by unifying T-money service center
 - Fare Discount
 - Minimizing civil transportation burden by applying transfer discount policy
 - Applying transportation mileage service
- Benefit to the government
 - Efficient operation
 - Enhancement of public interests
 - Efficient and scientific policy making by analyzing transportation data
 - Operation of feeder/truck line
 - Operation of distance-based fare system and semi-public bus operation
 - Clear settlement of fare profit
 - Foundation for high tech transportation infrastructure
- Benefit to Transportation Providers
 - Efficient Management
 - By using scientific T-money data, efficient allocation of bus routes and controlling bus intervals are possible
 - Increase in revenue
 - Discount benefit for using T-money makes more people to use public transportation
- T-money Service

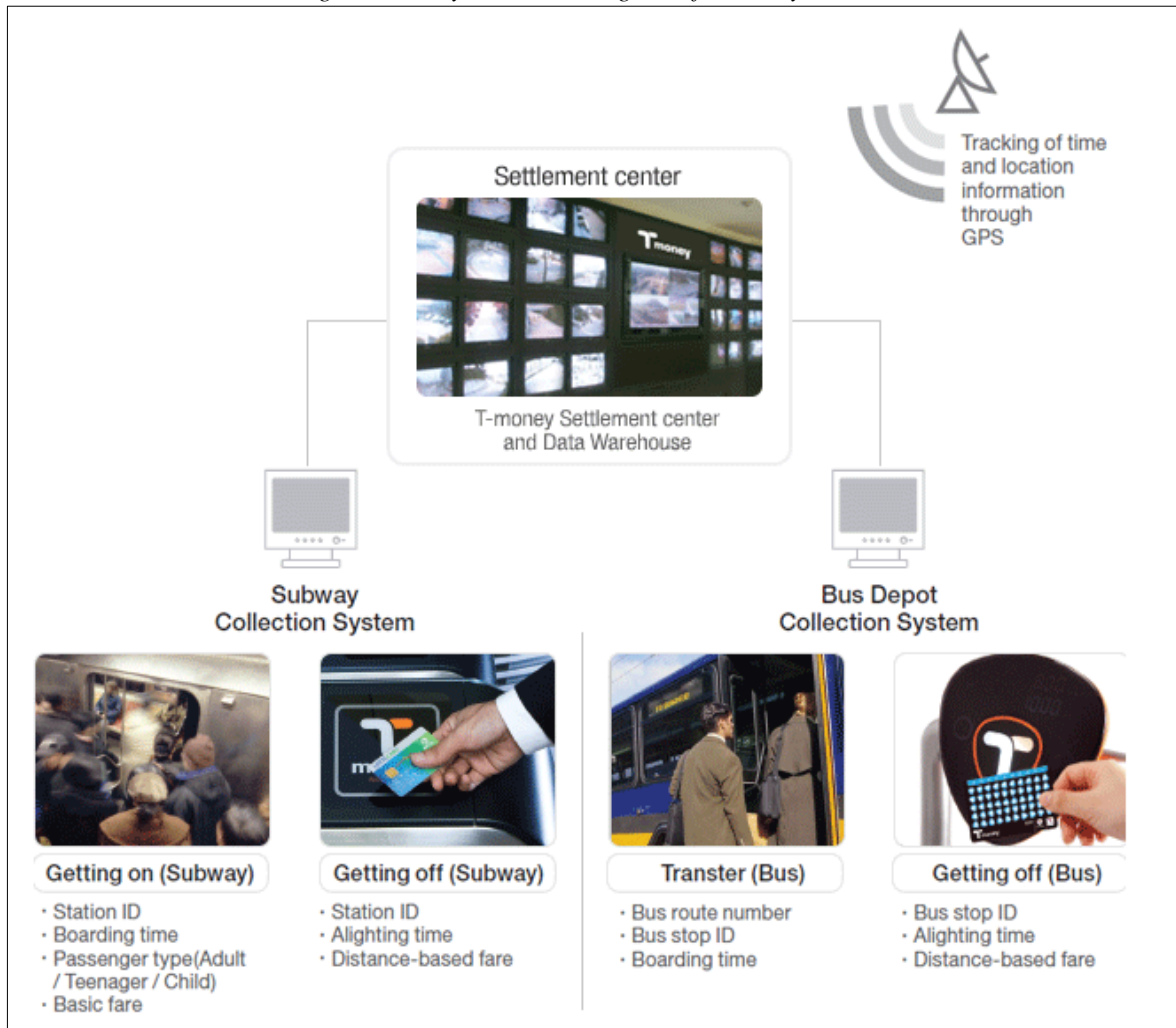
T-money, with the Killer application in the public transport sector, is vastly expanding the service to e-money market, and is providing various beneficial services to customers. With just one T-money card, there is no need to carry a wallet. You can quickly pay and go at various places without waiting in line for your change, receipt, or signature. T-money is safe, quick, comfortable, flexible and reliable.

- Transportation Card Function

All the transaction records are transferred and kept for more than one year in KSCC Data Warehouse (DW) which is connected to GIS DB and bus management system DB of Seoul Metro Government.

Thus, all the intelligence resources for public transportation management in Seoul are depending on KSCC DW.

Figure V-2 System block diagram of T-Money

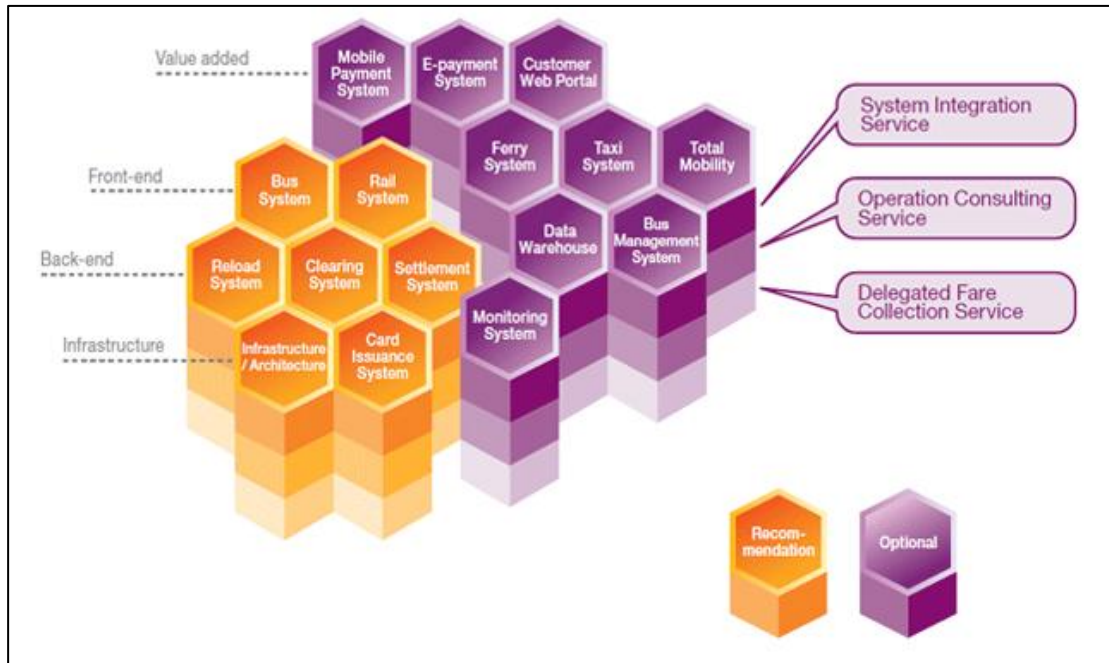


2.2.3 T-money Scheme

- Main Scheme

Service provided by the T-money system can be explained in four parts: the front-end, back-end, infrastructure and the value added. The systems in yellow are recommended, while the systems in purple are optional and can be added on to meet business requirements. Functions may be modified depending on the local standards and demands. This diagram presents a detailed overview of the individual systems.

Figure V-3 System schema

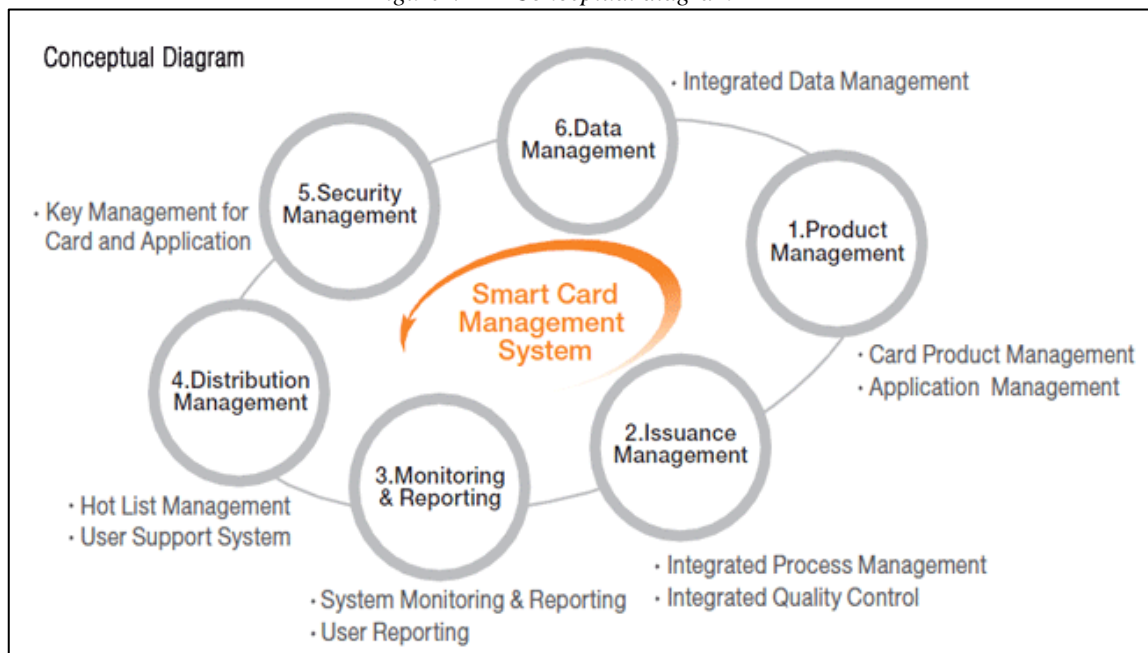


KSCC not only plays the role as System Integrator, but also provides Operation Consulting Service and Delegated Fare Collection Service. As a result, KSCC has become one of the largest multi service providers in transportation related business.

- Issuer Scheme

SCMS (Smart Card Management System) manages whole lifecycle of Smartcard. Also, SCMS provides customers with product management, Issuance Management, interface with other system (ERP, Customer Services, etc) and other affiliations

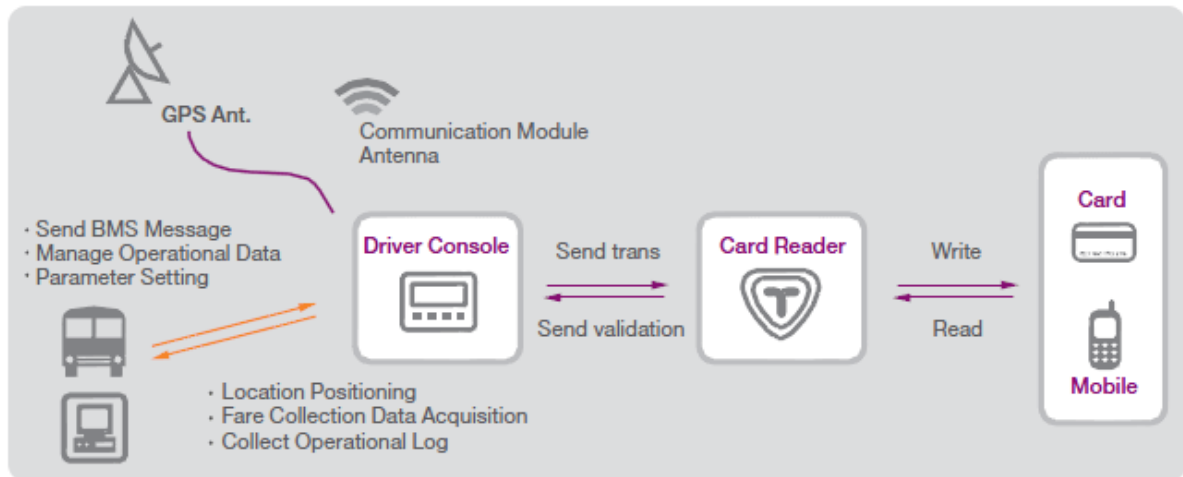
Figure V-4 Conceptual diagram



- Infrastructure Scheme

Seoul’s successful Public Transport Reform Project would have been impossible without the state-of-the-art IT technology and reliable products. T-money products are high-tech, reliable, secure, and most important, cost-effective.

Figure V-5 Service provided by integrated bus solution



Routing	Trip Demand Analysis, Demand responsive routing and networking
Scheduling	Loading/Unloading analysis, Optimized scheduling
Speedy Services	Initiating express services, Minimizing time for waiting transfer and access
Tight Control over Operations	Reward by operating distance, Monitoring operation and safety code violation by both operators and drivers
Congestion Management	Route-specific congestion control, Bus-stop congestion management, Skip/stop evaluation
Scientific Operation Management	Dynamic operation control for relieving congestion, Utilizing detour by scenario, Easy Access to bus services, Providing real time information of operations to passengers, Analysis of reasonable density on board and shelters
User data Management	Trip records by routes, stops and time, Fare collection records by operators and routes, Trajectory records by operation, allocation interval, and operation speed

3. Implication

During investigation of other case in the around world, it was not is to find 100% matching system or business concept with Smart Citizen Card system. It means that city government of Buenos Aires led the market for e-Government filed for provide civil service with Smart card. As we mentioned above in this cheater, there are some similar system such as health care, trasportaton and other. Even lack of information for benchmarking, The Korea Smart Card is the most acceptable for the Buenos Aires.

VI. Recommendation (RC)

1. Overview

Major issues, budget, and the working process that need to be taken into consideration in establishing Smart Citizen Card will be defined in this chapter. Also, the evaluating standards for assessing the feasibility of this project will be presented in regard to the future establishment of this system.

2. Target Objectives

2.1 Target description

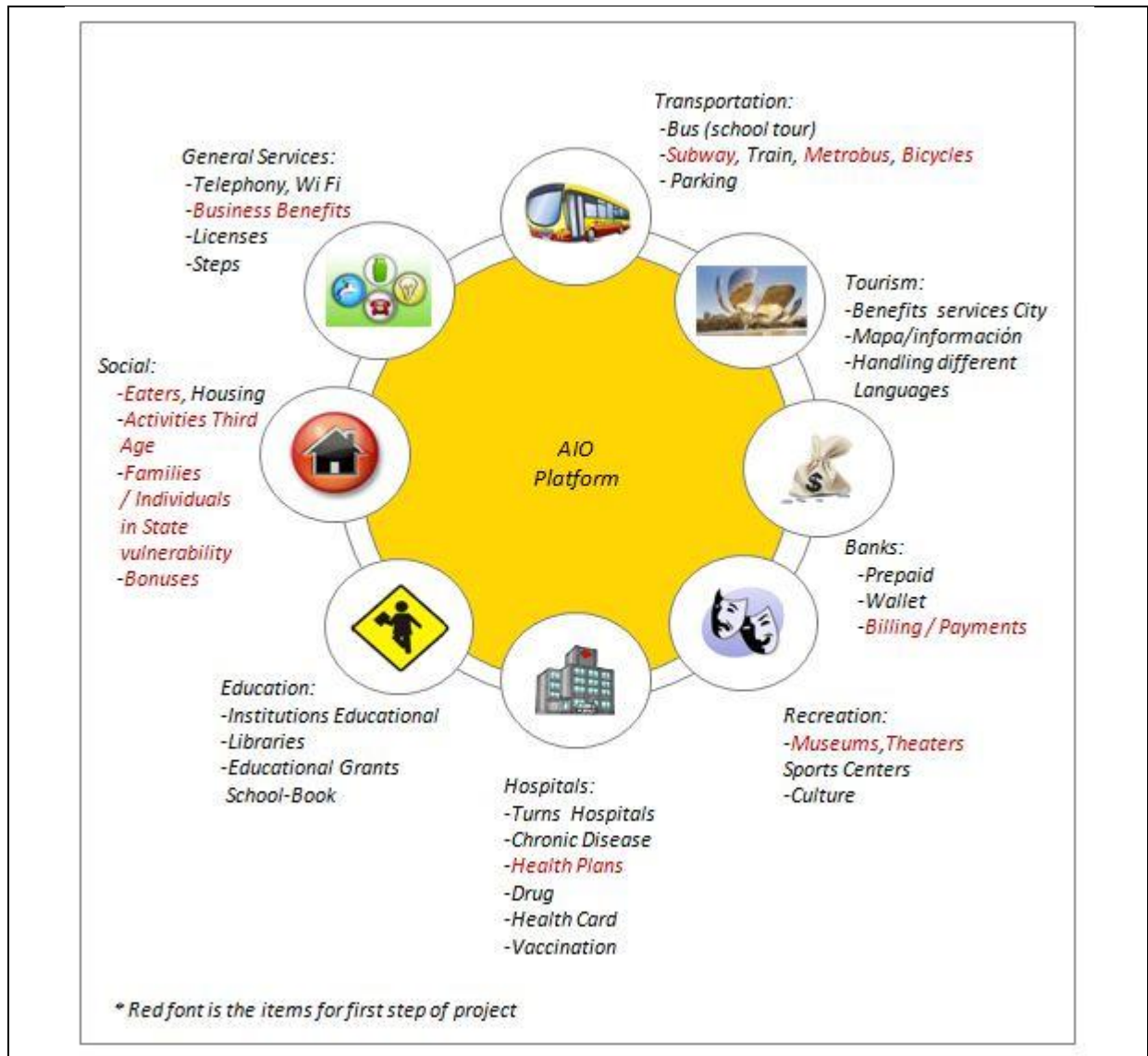
The objective of this Smart Card solution is to provide benefits as follows: systemic civil services to the citizens of Buenos Aires, efficient support to the underprivileged, and various services to citizens and all other economically active in the city of Buenos Aires.

Requirements following the Technical Analysis of this project are shown as below.

Table VI-1 AIO project main target

Feasibility study on Smart Citizen Service HUB (AIO) with Smart Card

In terms of citizen`s service satisfaction



Source: Buenos Aires city government

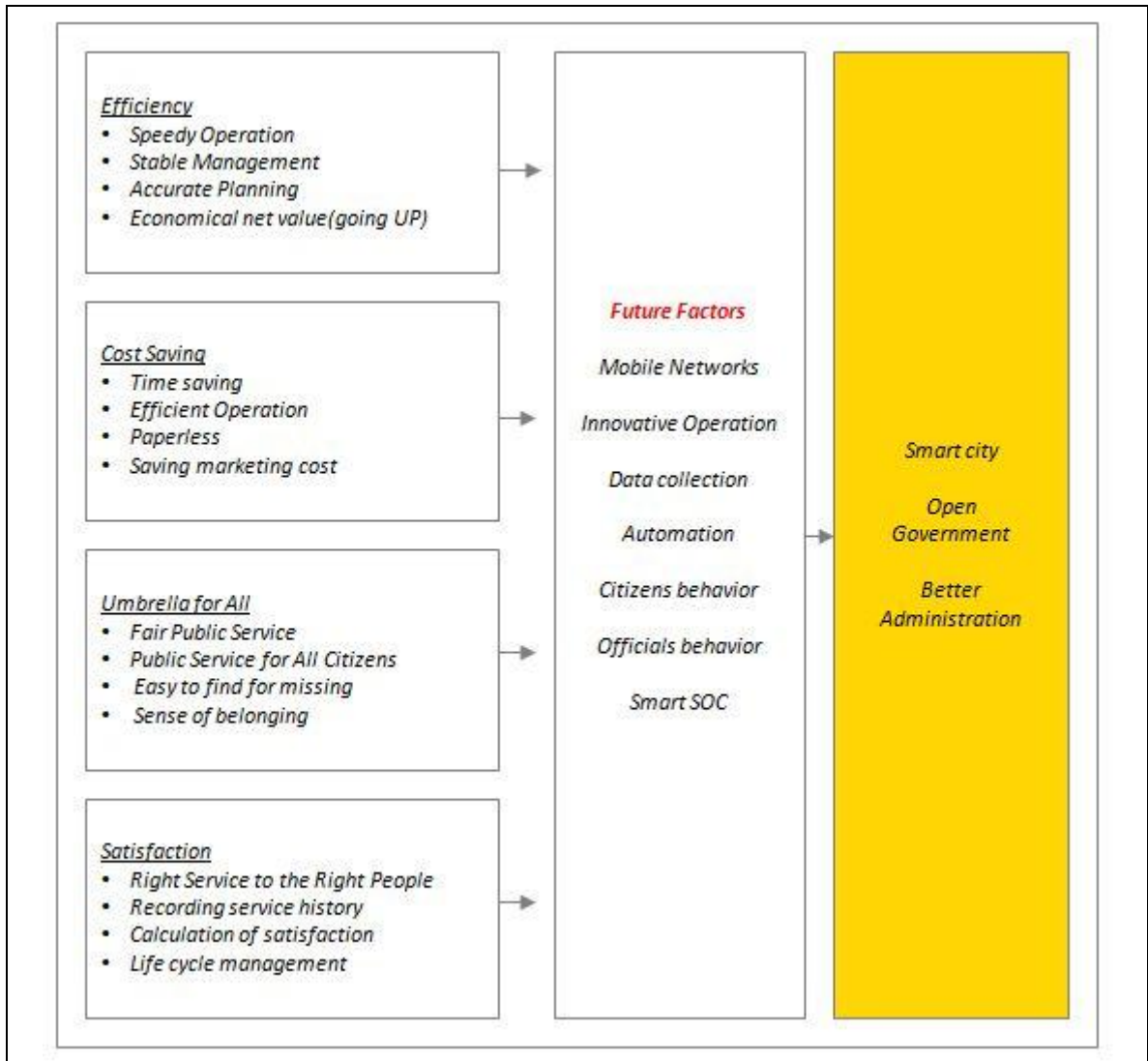
As shown above, the existing services provided both directly/indirectly from the city of Buenos Aires will be re-established by Smart Card system; and in conjunction with that, the prospective services will be extending to visitors as well as to the citizen of the city of Buenos Aires through the introduction of Smart Card.

* The red font of above AIO project main target is the first task to implementation.

2.2 Expected Effectiveness

Expected due to the introduction of the figure> AIO platform expected effects

Figure VI-1 Expected effectiveness AIO project

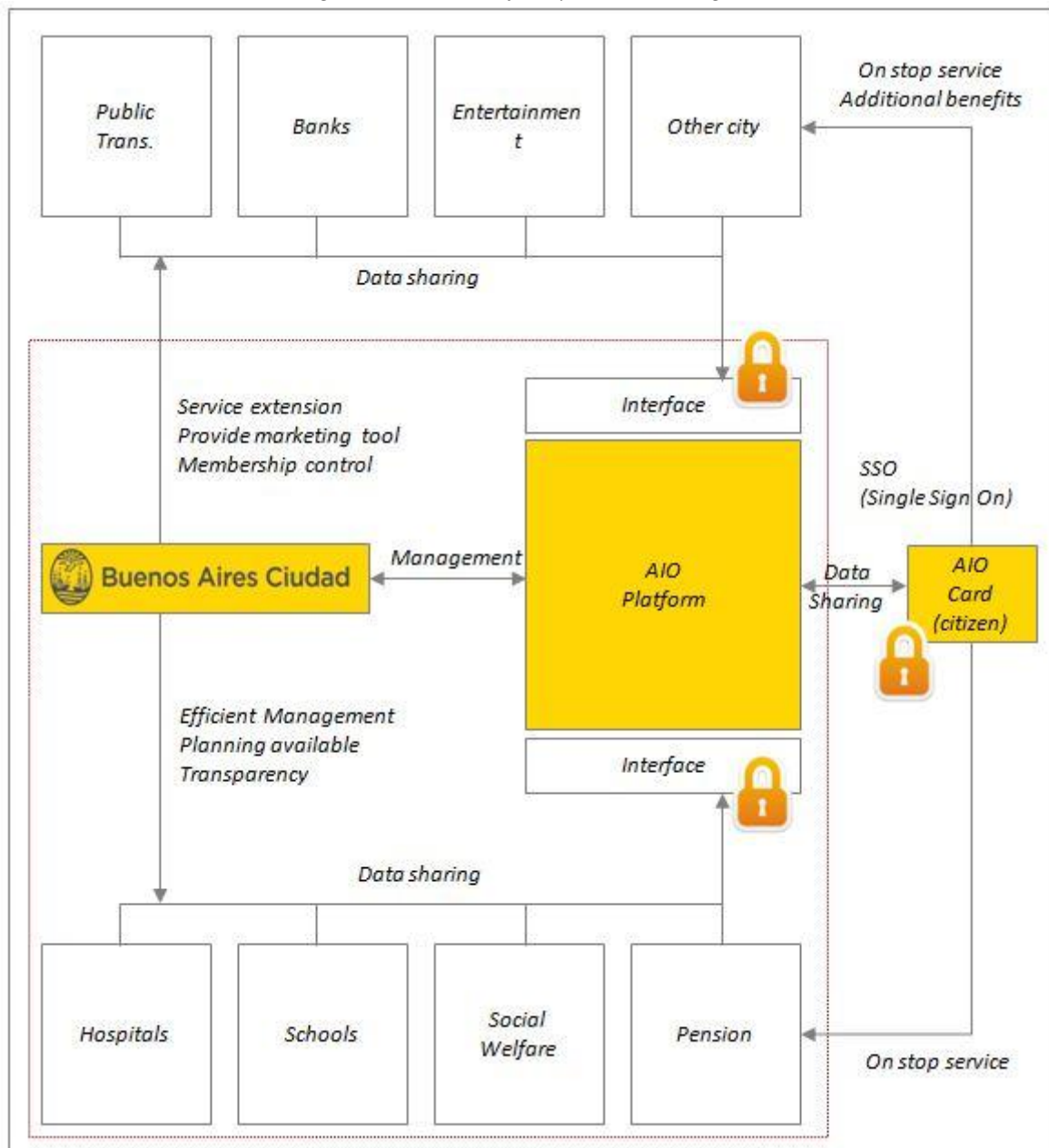


Source: FSCT

Targets of the estimated effects are aforementioned in the Technology Analysis section.

3. System envisioned

Figure VI-2 AIO Project system block diagram



4. Goals(Consideration) Review

Taking the fact that this project proceeds step by step into account, the introduction of scalable Platform is one of the most important considerations for achieving the goals of this project. The Open Platform for Smart Card Technology is described in detail as below.

4.1 Overview of Smart Card

To the limited hardware resources of the IC chip, Smart Card, called a microcomputer, is equipped with microprocessor (CPU), OS (Operating System), a security module (cryptographic

algorithms), memory (ROM, RAM, EEPROM), etc. Currently, Smart Card is widely used in various fields such as finance, transportation, communication, identification; and most recently due to the development and popularization of smart phones, NFC (Near Field Communication) and M2M (Machine To Machine) service models are being discussed.

Smart Card operating system to be introduced in this project can be divided into two kinds of classification as follows:

Table VI-2 Smart Card Operating System(COS, Chip Operating System) Classification

Division	Explanation
Closed (Native) smart card	<ul style="list-style-type: none"> Used as a single-purpose
Open platform for smart cards	<ul style="list-style-type: none"> Used for the purpose of multi-purpose Open platform for smart card chip using standard language with an open API (Application Programming Interface) to develop an application-independent, re-usability is very excellent.

Smart Card Applications are being used in various fields such as cash cards, electronic money, credit cards, identification, Mankato membership card, access control and parking management.

4.2 Operating system

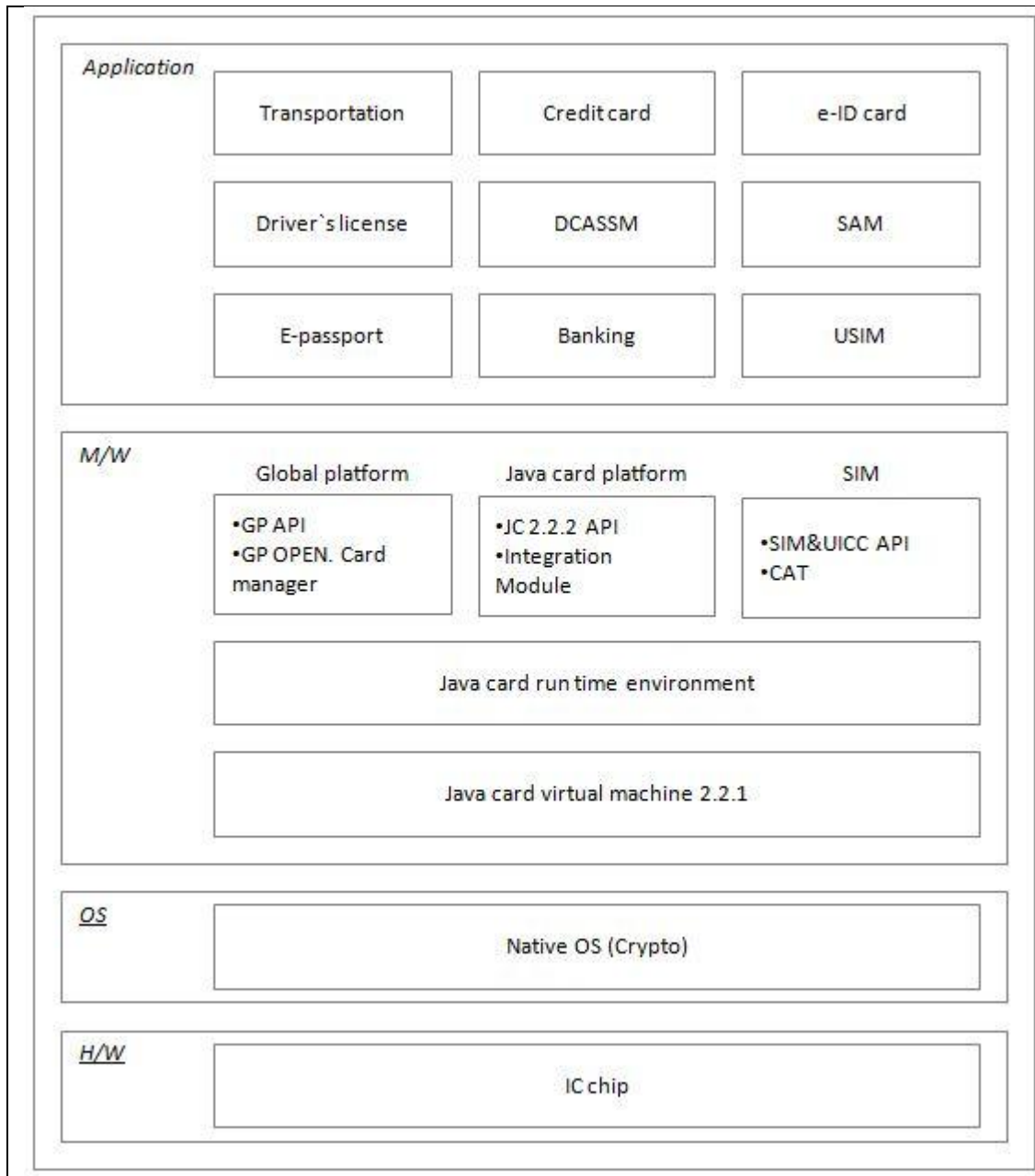
AIO project will be described on the basis of Open Platform, rather than Closed Platform because the range of this project is purposed to spread out to public transportation, third-party operators, and other cities

Open Platform can be categorized in MULTOS (Multi-Application Operating System) and Java Card; MULTOS is developed by mondekseu (Mondex) and managed by MAOSCO consortium, and using its own proprietary language called MEL (Multos Executable Language); Java Card is manufactured by Sun Microsystems (now ORACLE) and currently, the form of its own solution equipped with the Java Virtual Machine (Java Card Virtual Machine) card is in process of developing on the basis of Java Card.

4.3 Open Smart Card Platform

The basic framework of Smart Card Platform to be considered in this project is same as that of Smart Card, shown in the figure below.

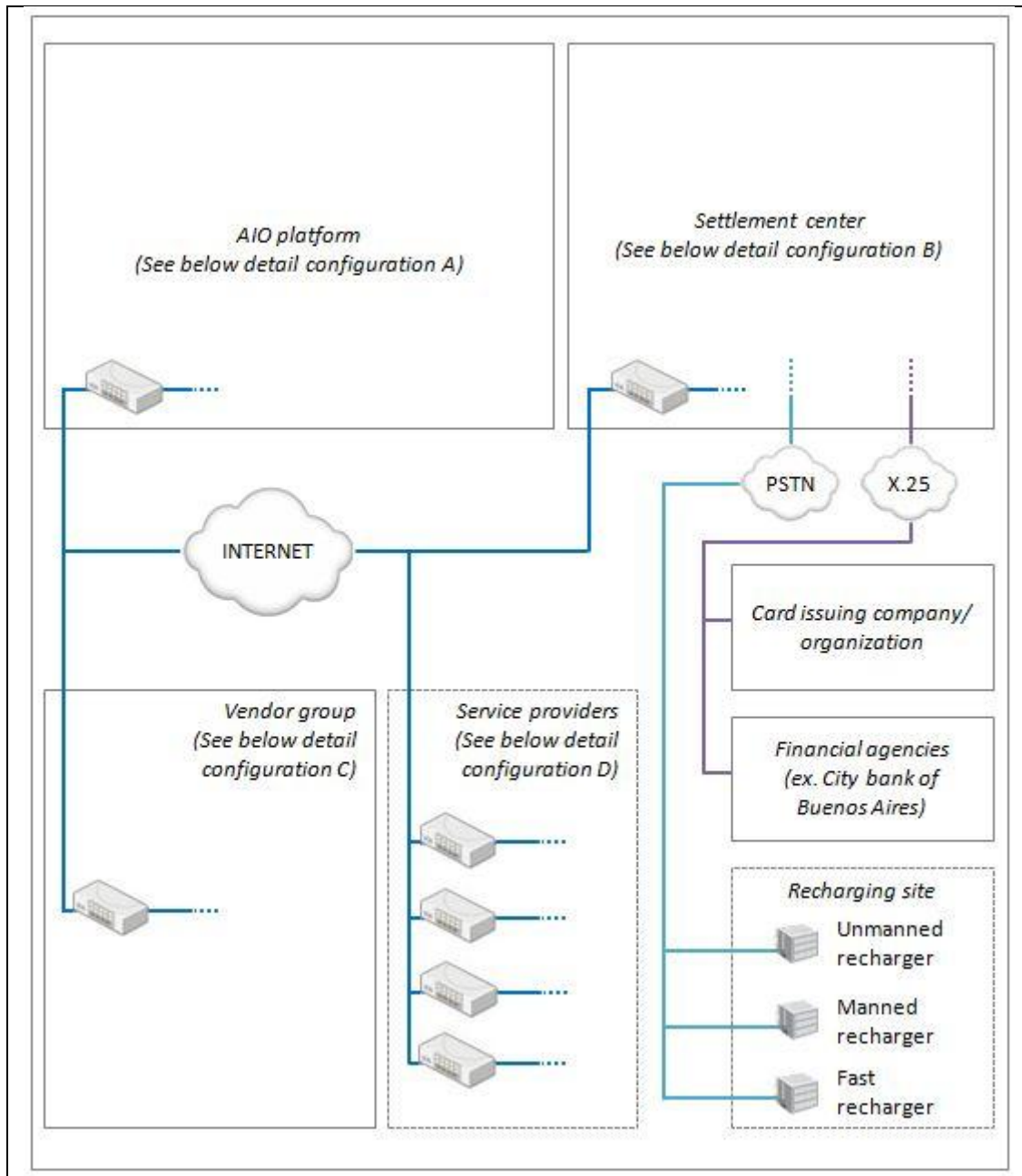
Figure VI-3 Open Smart Card Framework



5. H/W Configuration

AIO project of the entire hardware configuration is shown in the figure below.

Figure VI-4 H/W Configuration



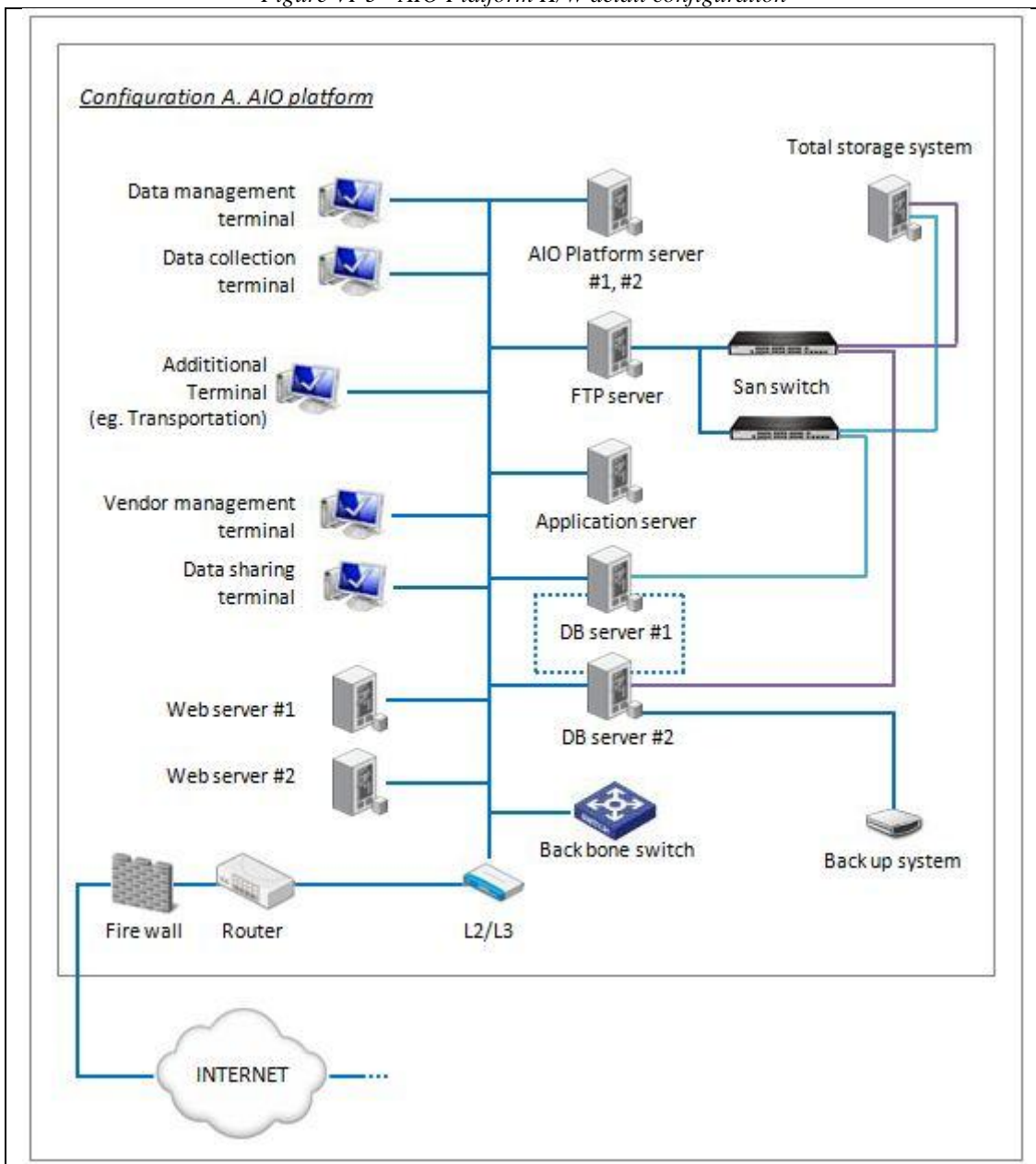
The entire H / W configuration is classified into four categories: AIO platform areas where the entire system is operating, the billing part, vendor groups, and service providers of each sector. Network uses a private network and a public network simultaneously according to the given situation, and the corresponding configuration will be described in detail below.

In addition to the main part, network is composed through the card issuing authorities and financial institutions, and charging stations, by utilizing the general switched telephone network and X.25 (Protocol that enables data communication between computers in different network), which is delineated in the figure above, and the part connected to the corresponding network will be described in more detail below.

5.1 AIO Platform H/W detail configuration

The detailed configuration of AIO platform H/W is shown in the figure below.

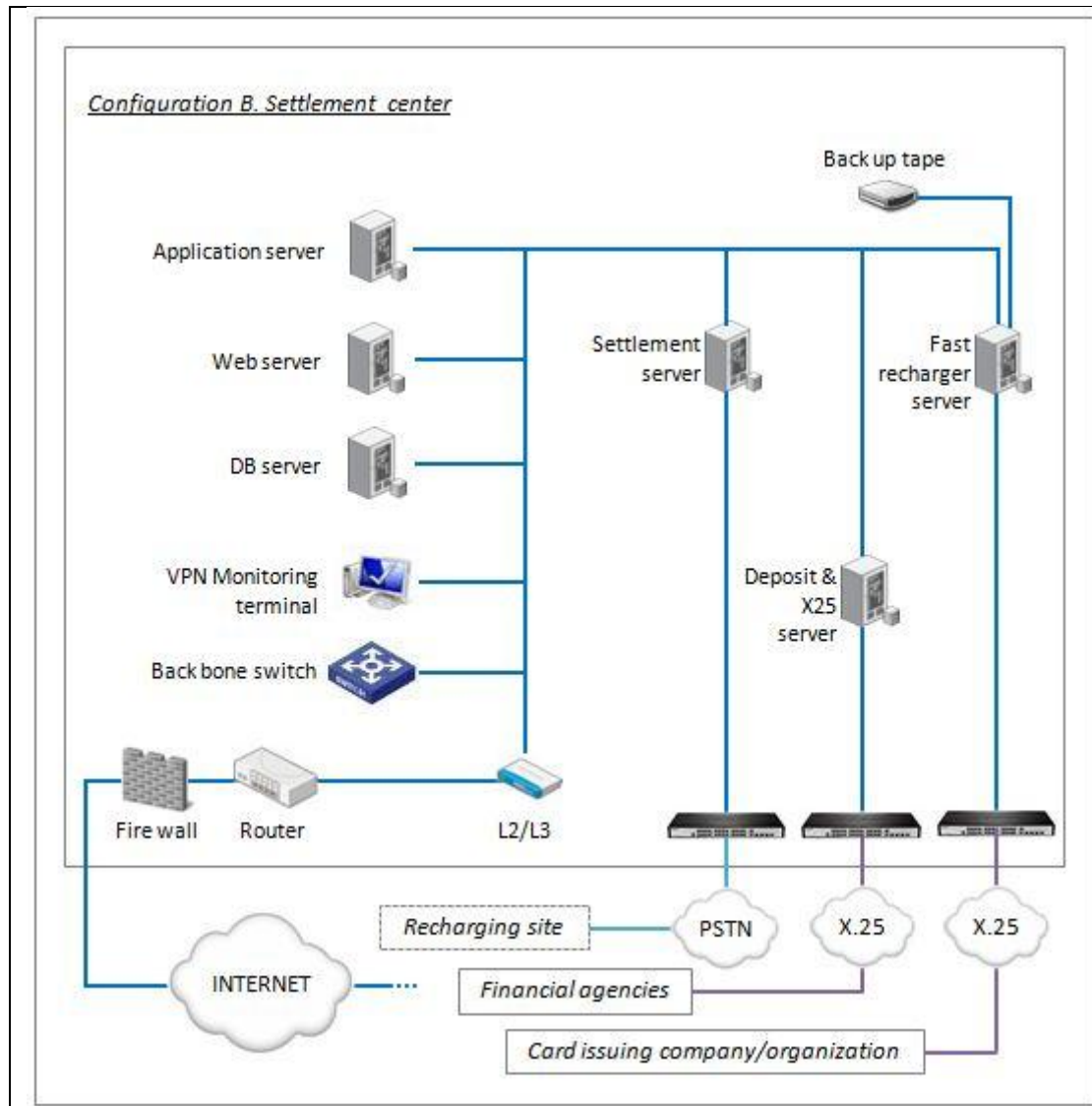
Figure VI-5 AIO Platform H/W detail configuration



5.2 Settlement center H/W detail configuration

H/W configuration regarding the billing and recharging hardware is shown in figure VI-5 below; and considering that the scope of business will expand to public transportation, the same concept is applied to charging stations (Recharge).

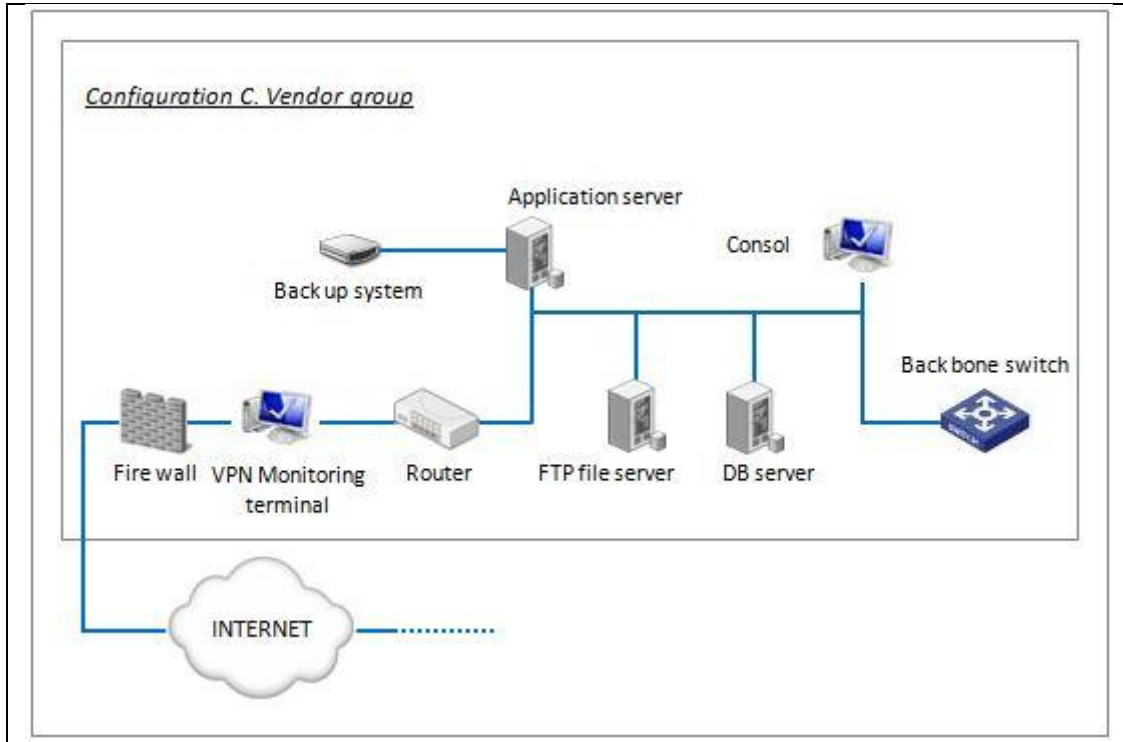
Figure VI-6 Settlement center of H/W and detail configuration



5.3 Vendor Group H/W detail configuration

H/W configuration regarding Vendor Group (Vendor operator), which is in full charge of managing third-party providers among the individual providers of AIO Smart card services, is shown in the figure below.

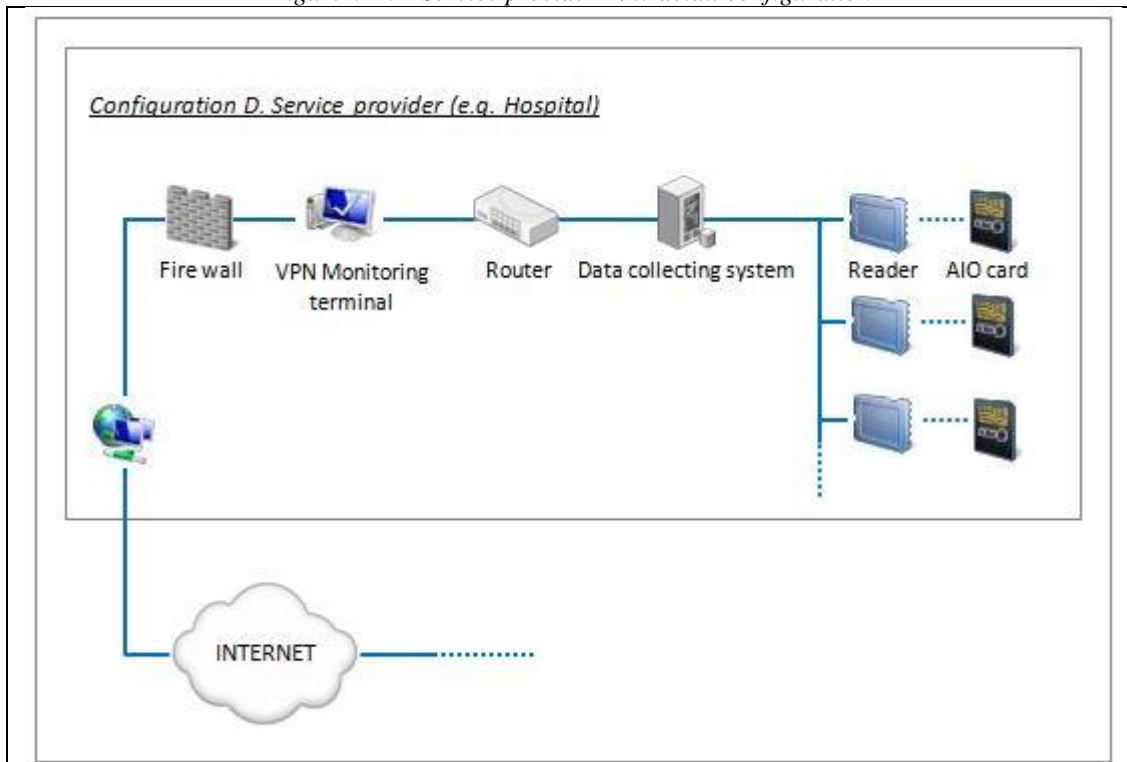
Figure VI-7 Vendor group H/W detail configuration



5.4 Service provider H/W detail configuration

System configuration by each entity providing substantial services to citizens is shown in the figure below.

Figure VI-8 Service provider H/W detail configuration



6. Project Budget(estimated)

The range of estimated budget planning for AIO Smart Card project is categorized into smart card terminals, card issuers, the operating room, software, and other management costs, which is shown in the figure below. The existing resources of the city of Buenos Aires can be shared and used for system operation center and committed workforce; however, all the necessary items are taken into account without omission in this budget planning.

The main assumptions are as follows.

- Service card terminal (Reader / validator): 2,000
- Smart card issued: 1,973,000 (This service estimated beneficiary basis)
- H / W: the above-mentioned H / W configuration Standard

Table VI-3 Estimated Budget Planning for AIO smart card project

Unit: `000 USD

Category	Items	Description	Amount
Card validator	Validator	Card reader for service provider	2,073
	Manned recharger	General recharge device	110
	Unmanned recharger	KIOSK format (Device only)	550
	Development of validator	H / W and F / W development	275
Card issue	Smart card	RF card (1k), Interface (ISO14443), Type A (13.36Mhz)	3,620
	SAM & SAM development	Payment / recharge / issue SAM, development program	110
	Card issue machine	Mass issuing machine (1,000 ea / hour)	734
Operation Center	Operational room	UPS / Thermo-hygrostat	459
	Server	Collecting server, settlement server, recharge server, confirmation server, DB server, storage, HSM, Node server, etc.	1,009
	Network devices	Firewall, L4/L3/L2, Router	275
	System S / W	DBMS, M / W for transaction	917
S / W	System for operation center	Collection / settlement / recharge / confirmation, interface between stakeholders, back office, monitoring	734
	Node system	Collection and accumulation, interface with operation center	28
Others	Others	Shipping cost / other operation cost	300
Total			11,194

7. Project Schedule

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The entire project period, including both the system establishment period, and the infrastructure configuration period is expected to take about nine months. The overall schedule including three months of the pilot-project running period is shown in the table below.

Table VI-4 Estimated project schedule

Activities	M-9	M-8	M-7	M-6	M-5	M-4	M-3	M-2	M-1	M
Preparation of project										
Construction of infrastructure (Center)										
Purchase of H / W devices										
H / W delivery										
Installation and test										
System development										
Test operation										
Training										
Public relations										
System open										

* Preparation project: (PMO setting, administrative process, establish SPC if necessary, etc.)The detailed checklist that the city of Buenos Aires is preparing in conjunction with this current project is presented in the table below.

Table VI-5 Smart citizen card pilot project check list

Category	Description
Conceptual Design	Scoping
Card	Procurement card provider + printers + readers
	Art design FINAL
	Pilot card with art
	Pilot evaluation board with art
	Card printing and personalization with art
	Reception cards
Beneficiary Universe	Selecting a universe to include stage
	BD review
	Function generation to load
	Reporting burden in BD Unico
	Verification and validation data load
	BD UNIFIED OK TO CUSTOMIZE
Benefits	Supplier selection
	Shopping process service provider
	Adjudication provider
	Pre launch

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	High shops
Technology	Analysis and interfaces with related systems definition
	Construction ADP interfaces
	Programming, test, production release interfaces
	Initial production Interfaces
	Post Installation support
Card Management System	Purchase card management administrator
	Installation tool provider}
	Training areas involved
	Customization settings user area
	The deployment
Integration with existing applications	Identification of coexistence with other applications
	Development of integration with existing applications
	Development of bank integrations with applications
	Unit test
	The deployment
Training	Processes and new applications
	Training development
	Training
	Post-production support
Distribution	Defining strategy selected according to Universe
	Generate map process delivery of the Cards
	Prepare materials for distribution event
	Define and train teams in the task of distribution
	Define distribution in places / offices of the Universe
	Define process and train in places of the Universe
	Select cards to places / people
	Sending cards to different places
Communication	Definition process and strategy, media, etc.
	Development
	First event of communication
LAUNCH PROGRAM	LAUNCH PROGRAM
	Delivery to beneficiaries

Source: Ministry of Modernization, Buenos Aires city government

8. Business development

8.1 Project development methodology

In the decision-making process for this project, the modernization portion of the City of Buenos Aires (Ministry of Modernization) can directly operate and manage; however, considering that numbers of stakeholders are interrelated in this project, it is considerable to establish a special purpose company (SPV) for efficient and transparent operation.

In developing Smart Citizen Card system, it is appropriate to divide the system into three broad ranges: development and operation of the project, service providers recruit and various business processes, and Smart Card issued to citizens.

It can be operated in three separate dimensions as follows: R & R on system development and operation by the city government, providers recruit and various business processes (Card validator) by Vendor Operator, and card issuance by R&R financial institutions.

<Table> Major R & R and the prospecting effects by each sector and concept of return are defined as follows.

Table VI-6 R & R by sector and concept of return

Category	Description	Concept of return
Ministry of Modernization	<ul style="list-style-type: none"> • Control tower of system • System development and operation • Vendor operator selection • Preparation of infrastructure • Policy making • Collaboration with governmental body • Organization setting • Establish SPV (If necessary) 	<ul style="list-style-type: none"> • Citizens satisfaction • Increasing tourist> tax income up
Vendor operator	<ul style="list-style-type: none"> • General operation for third party providers • Marketing and extension service provider • Service quality control • Installation of validator and other infrastructure (H / W) • Training 	<ul style="list-style-type: none"> • Commission • Membership fee • Maintenance fee
Financial group	<ul style="list-style-type: none"> • Smart card issue and delivery to citizens • Account management 	<ul style="list-style-type: none"> • Marketing tool as commercial item • Deposit income

8.2 Funding process

In terms of funding for this project, Ministry of Modernization, Vendor operator and Financial group based on above 8.1, are responsible to recover the investment in a number of ways, through the direct investment and Recovery Act (Direct investment and return). Direct Investment and Recovery is a typical form of PPP (public-private partnership), and can be defined as follows.

Public-private partnership (PPP) describes a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies. These schemes are sometimes referred to as PPP, P3 or P3.

PPP involves a contract between a public sector authority and a private party, in which the private party provides a public service or project and assumes substantial financial, technical and operational risk in the project. In some types of PPP, the cost of using the service is borne exclusively by the users of the service and not by the taxpayer. In other types (notably the private finance initiative), capital investment is made by the private sector on the weakness of a contract with government to provide agreed services and the cost of providing the service is borne wholly or in part by the government. Government contributions to a PPP may also be in kind (notably the transfer of existing assets). In projects that are aimed at creating public goods like in the infrastructure sector, the government may provide a capital subsidy in the form of a one-time grant, so as to make it more attractive to the private investors. In some other cases, the government may support the project by providing revenue subsidies, including tax breaks or by removing guaranteed annual revenues for a fixed time period.

Typically, a public sector consortium forms a special company called a "special purpose vehicle" (SPV) to develop, build, maintain and operate the asset for the contracted period. [1] In cases where the government has invested in the project, it is typically (but not always) allotted an equity share in the SPV. [2] The consortium is usually made up of a building contractor, a maintenance company and bank lender (s). It is the SPV that signs the contract with the government and with subcontractors to build the facility and then maintain it. In the infrastructure sector, complex arrangements and contracts that guarantee and secure the cash flows make PPP projects prime candidates for project financing. A typical PPP example would be a hospital building financed and constructed by a private developer and then leased to the hospital authority. The private developer then acts as landlord, providing housekeeping and other non-medical services while the hospital itself provides medical services.

VII. Feasibility Analysis (FA)

1. Benefit item set

1.1 Budget saving by task transparency

The definition of budget saving by task transparency is to increase benefits through the improvement of transparency in business from city owned organizations or organizations which is operated by city budget such as city hospitals (e.g. 34 city owned hospitals). Through integrated smart citizen card solution, transparent and efficient management process could be available (e.g. integrated civil request handling and prevention of unnecessary wasteful city budget spending).

As for the benefit item set, only two items have been set for budget saving such as medical civil service and education civil service. In the case of medical civil service, total potential beneficiary is 300,000 citizens (on the basis of 2012). The estimated budget has been set US\$ 10 per each beneficiary.

In this feasibility analysis, the assumption of saving by task transparency is only 2% of total expense. The detail of estimated budget saving is presented in the following table:

Table VII-1 Details of estimated budget saving for medical civil service

Unit: USD

Category	2012	2013	2014	2015	2016	2017
Beneficiary	300,000	300,000	306,000	312,120	318,362	324,730
Budget per beneficiary		10	11	11	12	12
Total estimated budget	0	3,000,000	3,213,000	3,441,123	3,685,443	3,947,109
Estimated saving		600,000	642,600	688,225	737,089	789,422

In the case of education civil service, there are several issues not only school meal but also school transportation, text book, etc. Total potential beneficiary is 460,000 students (on the basis of 2012). The estimated budget has been set US\$ 20 per each student.

In this feasibility analysis, the assumption of saving by task transparency is only 2% of total expense. The detail of estimated budget saving is presented in the following table:

Table VII-2 Detail estimated budget saving for education civil service

Unit: USD

Category	2012	2013	2014	2015	2016	2017
Beneficiary	460,000	460,000	460,000	460,000	460,000	460,000
Budget per beneficiary		20	21	22	23	24
Total estimated budget		92,000,000	96,600,000	101,430,000	106,501,500	111,826,575

Estimated saving		184,000	193,200	202,860	213,030	223,653
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1.2 Budget saving by business efficiency improvement

Through the Smart Citizen Card solution, civil service providers (e.g. Government officials) can improve their business performance and save budget by reducing working time, going paperless, and reducing other various opportunity cost. Total potential beneficiary is 1,973,000 citizens (on the basis of 2012) and the estimated budget has been set only US\$ 1.8 per each citizen.

The detail of estimated budget saving is presented in the following table:

Table VII-3 Details of estimated budget saving for business efficiency improvement

Unit: USD

Category	2012	2013	2014	2015	2016	2017
Social care	500,000	500,000	500,000	500,000	500,000	500,000
Health care	300,000	300,000	300,000	300,000	300,000	300,000
Education	1,093,000	1,093,000	1,093,000	1,093,000	1,093,000	1,093,000
city staff	80,000	80,000	80,000	80,000	80,000	80,000
Total beneficiary	1,973,000	1,973,000	1,973,000	1,973,000	1,973,000	1,973,000
Budget per beneficiary		1.8	1.9	2.0	2.1	2.2
Estimated saving		3,551,400	3,728,970	3,915,419	4,111,189	4,316,749

2. Cost item set

The system development cost was already mentioned in the recommendation section of the above chapter. In this chapter, cost item set will be described in terms of the cost of system management, operation, renewal and H/W upgrade as follows:

2.1 The cost of system management

The cost of system management is for maintaining and repairing the established system and S/W, and is 10% of the purchase price of system development.

2.2 The cost of system operation

The cost of system operation is 5% of the purchase price of system development.

2.3 Total cost of system renewal

The cost of system renewal is 30% of system development cost and this cost will be re-considered in every 4 year.

2.4 Total cost of H/W upgrade

In addition, the equipment needs to be replaced by new one due to the depreciation over time. Especially, due to the advancements of information technology, these equipments may have to be replaced earlier than we expect. It can be assuming that the duration of the each piece of the equipment is every 4 years, reflected by the estimation of the equipment life expectancy.

3. Feasibility Analysis

3.1 The setting of precondition

3.1.1 The setting of discount rate

The definition of discount rate is the interest rate that an eligible depository institution is charged to borrow short-term funds directly from a Federal Reserve Bank. Different types of loans are available from Federal Reserve Banks and each corresponding type of credit has its own discount rate.

The interest rate is used in discounted cash flow analysis to determine the present value of future cash flows. The discount rate takes into account the time value of money (the idea that money available now is worth more than the same amount of money available in the future because it could be earning interest) and the risk or uncertainty of the anticipated future cash flows (which might be less than expected).

However, the monetary value is possible to change under influence on over time. In this point, it defines monetary values (or the purchasing power of money) as the purchase of any goods of monetary values

$$\text{The nominal interest rate} = (1 + \text{real interest rate}) * (1 + \text{inflation rate}) - 1$$

$$\text{The real interest rate} = \frac{1 + \text{the nominal interest rate}}{1 + \text{the inflation rate}} - 1$$

3.1.2 Cash flow statement

Cash flow statement can be divided into nominal cash flows and real cash flows. Nominal cash flow is cash flow in absolute terms without adjusting for inflation. In the short term, nominal cash flow equates to real cash flow, but if a cash flow remains the same in a period of high inflation, this result in a real loss for the person or company receiving a cash flow and a real gain for the one giving it. When applying the cash flow and the discount rate in the feasibility analysis, nominal cash flow should be accurate by nominal discount; real cash flow should be discounted by real discount rate. And then it can determine exactly the current value.

Table VII-4 The real discount rate

Category	The rate of inflation (%)	Nominal discount rate(%)	Real discount rate(%)
Discount rate	6	10	3.8

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		12	5.7
		14	7.5
		10	1.9
	8	12	3.7
		14	5.6
		10	0
	10	12	1.8
		14	3.6

3.2 Estimated Cash flow

Based on 1. Costs of setting 2. Benefits of setting of this feasibility study, the estimated cash flows are as below.

Table VII-5 Estimated Cash flow table

Unit: US\$ `000

category	2013	2014	2015	2016	2017	2018	Total
Benefit							
Budget saving by task transparency	0.0	244	257	272	287	303	1,362
Budget saving by business efficiency improvement	0.0	3,551	3,729	3,915	4,111	4,317	19,624
Total	0.0	3,795	3,986	4,187	4,398	4,619	20,986
Cost							
H/W purchase costs	8,646	0	0	0	4,323	0	12,969
System development costs	1,789	0	0	0	0	0	1,789
System renewal costs	0	0	0	0	537	0	537
System management costs	0	179	179	179	179	179	895
System operating costs	0	89	89	89	89	89	447
Total	10,435	268	268	268	5,128	268	16,636
Cash flow (year)	-10,435	3,527	3,718	3,919	-730	4,351	4,350
Cash flow (Accumulation)	0	-6,908	-3,190	729	-1	4,350	0

If the construction of the Smart Citizen Card system is started in 2013, the accumulated cash flow converts into + in 2014.

3.3 Feasibility Analysis

This analysis is to verify the feasibility of this project based on the net present value, and to confirm the feasibility of this project through B/C analysis in order to find the discount rate matching the costs and benefits of the internal revenue law as a secondary means of the analysis of the above to use.

3.3.1 The net present value method (NPV)

In finance, the net present value (NPV) or net present worth (NPW)[1] of a time series of cash flows, both incoming and outgoing, is defined as the sum of the present values (PVs) of the individual cash flows of the same entity.

In the case when all future cash flows are incoming (such as coupons and principal of a bond) and the only outflow of cash is the purchase price, the NPV is simply the PV of future cash flows minus the purchase price (which is its own PV). NPV is a central tool in discounted cash flow (DCF) analysis and is a standard method for using the time value of money to appraise long-term projects. Used for capital budgeting and widely used throughout economics, finance, and accounting, it measures the excess or shortfall of cash flows, in present value terms, once financing charges are met.

NPV can be described as the “difference amount” between the sums of discounted: cash inflows and cash outflows. It compares the present value of money today to the present value of money in future, taking inflation and returns into account.

The NPV of a sequence of cash flows takes as inputs of the cash flows and a discount rate or discount curve and outputs of a price; the converse process in DCF analysis — taking a sequence of cash flows and a price as input and inferring as output a discount rate (the discount rate which would yield the given price as NPV) — is called the yield and is more widely used in bond trading.

$$NPV = \sum_{i=1}^n \left(\frac{Bi - Ci}{1(1 + d)^i} \right), \quad i = 1, 2, \dots, n$$

Table VII-6 According to the change of the discount rate,, current value

Unit: %, USD

category	The rate of inflation	Nominal discount rate	Real discount rate	The net present value
Discount rate	0	10%	0%	\$ 991,342
		12%	0%	\$ 472,320
		14%	0%	\$ -7,646
	6	10%	3.8%	\$ 2,899,521

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		12%	5.7%	\$ 2,260,870
		14%	7.5%	\$ 1,701,779
	8	10%	1.9%	\$ 3,593,622
		12%	3.7%	\$ 2,934,617
		14%	5.6%	\$ 2,293,197
	10	10%	0.0%	\$ 4,349,726
		12%	1.8%	\$ 3,631,810
		14%	3.6%	\$ 2,969,867

In conclusion of NPV analysis, all the results are acceptable for investment even in the case of considering nominal discount rate. In principle, the feasibility is very high because this feasibility is not covering qualitative interpretations.

3.3.2 Internal Rate of Return (IRR)

The internal rate of return on an investment or a project is the "annualized effective compounded return rate" or "rate of return" that makes the net present value (NPV as $NET * 1 / (1 + IRR)^{year}$) of all cash flows (both positive and negative) from a particular investment equal to zero.

In more specific terms, the IRR of an investment is the discount rate at which the net present value of costs (negative cash flows) of the investment equals the net present value of the benefits (positive cash flows) of the investment.

IRR calculations are commonly used to evaluate the desirability of investments or projects. The higher a project's IRR, the more desirable it is to undertake the project. Assuming all projects require the same amount of up-front investment, the project with the highest IRR would be considered the best and undertaken first.

A firm (or individual) should, in theory, undertake all projects or investments available with IRRs that exceed the cost of capital. Investment may be limited by availability of funds to the firm and/or by the firm's capacity or ability to manage numerous projects.

$$IRR = \sum_{n=1}^n \left(\frac{Bi - Ci}{(1 + d)^i} \right) = 0, \quad i = 1, 2, \dots, n$$

During the IRR analysis, the result of internal rate of return showed 49.8%. It means that borrowing rate of interest will not be 49.8%, which means this project will be appropriated.

$$\mathbf{IRR = 14.0\%}$$

Even though Argentina is in the high inflation environment, 14.0% is acceptable for investment.

4. Conclusion

Generally, it is meaningless to calculate the investment benefits of public/civil services due to its unique characteristics as public investment. However, if appreciating the value of qualitative

effectiveness as well as quantitative effectiveness, this Smart Card solution has sufficient feasibility to promote.

Especially, considering that the benefits generated from marketing promotion, interests from short-term deposits, private-run eateries, movie theaters, and other benefits from reduction of promotion cost and sales increase, the feasibility of this Smart Card solution seems very high.

Finally, it is prospected that this Smart Card solution will extend to all public transportation sectors such as Metro, Bus, and Taxi; and if realized, the benefit of the Smart Card solution as an All-In-One Smart Card will be far more expanded.