RFI
INQUIRY TO THE MARKET
INFORMATION AND USER SUPPORT COMPLEMENTARY SERVICES FOR THE PUBLIC TRANSPORTATION SYSTEM OF SANTIAGO

TABLE OF CONTENTS

1 PROCESS, DEADLINES AND SUBMISSION OF PROPOSALS

All national or foreign Companies interested in answering the herein Inquiry to the Market shall send their proposals to **rediseno.contacto@dtpm.gob.cl,** through the corresponding digital file, **before 11:59 PM on Wednesday, November 30th, 2016.**

The official language for the Market Inquiry process is Spanish. However, both the answers and the additional material may be sent in English, assuming the interpretation that may be made of this information.

Notwithstanding the foregoing, the Ministry of Transportation and Telecommunications may, through the previously mentioned email, interact with the suppliers, making and answering inquiries that further specify the information that needs to be gathered.

It is worth mentioning that the provided answers are referential and do not -by any means- establish any obligations between the Company and the Ministry of Transportation and Telecommunications. In this regard, it is possible that the requested information is not available; hence, we encourage you to leave in blank any information you not have the knowledge of or do not feel fit to respond.

Furthermore, understanding that part of the requested information regarding costs may be sensitive, not responding to this requirement does not hinder the continuity of the participant in the Inquiry Process.

If you consider there to be a relevant issue that has not been covered by this document, please feel free to add it to your answer. In this context, you may attach all the additional information you consider useful to your answer: catalogs, brochures and others.

All suppliers that submit their answers may be called for a meeting or workshop to exhibit them, individually or as a group, through a presentation at the Ministry's facilities or through a videoconference **between December 1st and December 16th, 2016** or during both dates, which should be coordinated through the provided contact. These sessions will be in Spanish; hence, if required, the participant shall hire the needed interpreting services. . These meetings will be held with each supplier individually, one on one.

These meetings shall respect the Principle of Transparency, Publicizing and Equality of the Companies interested in answering the present Market Inquiry.

Finally, it is hereby established that the information and contents herein are provided solely for information purposes, and the fact that these services are grouped does not relate to the way in which they could be associated during the bidding process.

2 GLOSSARY

The words and acronyms used in the hereby document will have the following meaning:

1	Universal Access	Provide access to a specific system with no exclusions
2	DTPM	Board of Public Metropolitan Transportation.
3	Google Transit	Google system whose role is to plan trips (origin and destination) with the data provided by the user.
4	GTFS	*General Transit Feed Specification.* It defines a common format for the public transportation schedules and the geographic information related to them.
5	Static information	Fixed Information, like bus stop signs
6	Real time information	On-line Information that varies in real time, usually disseminated by digital channels or media
7	Intermodality	Operationally integrated system (transfer services).
8	Access Media	It is a contactless mean implanted in or attached to any material authorized by the Ministry, which allows access to the System's Transportation Services and to pay for the corresponding fare.
9	Unimodal	One mode; in transportation, it is one trip with no transfer.
10	PIV (VMS)	Variable Information Panels-Variable Message Signs
11	PO	Operational Programs
12	Point of Access or Stop Point	Physical space destined to facilitate access to a transportation mean, examples: Bus stop, Terminals, Intermodal Stations, among others.
13	Stop Sequence	Group of official stops along a bus route.
14	Payment Services	Money payment system.
15	Synoptic	Tool responsible for monitoring and controlling the fulfilment of the business rules of the transportation system's operation.
16	Shapes	Group of vectors that form a bus route.
17	Sustainable	Long-lasting; it maintains throughout time.
18	TNE	National Student Card
19	Outline	A vector of a determined bus route.
20	Extra vehicular Payment Zones or Payment Zones	Areas defined by the Ministry in which access the validation process is performed before using Transportation Services.

3 INTRODUCTION

One of the Ministry of Transportation and Telecommunications' (MTT) primary objectives is to have an efficient, safe and quality Public Transportation System. In order to comply with the prior, and given the opportunities for improvement and development presented by the next maturity date of the contracts entered into by the supply of different complementary services of Public Metropolitan Transportation System of Santiago we are re-designing such services.
Given this scenario, we need to carry out a market inquiry process in order to gather the main advances and services that the industry currently offers in terms of the information and customer service of public Transportation.

In this manner, we expect to gather the knowledge and proposals of existing technological services in the national and international market and the best practices and recommendations, with the purpose of assessing its inclusion to Public Metropolitan Transportation System of Santiago in the framework of these services' next bidding process.

4 OBJECTIVES OF THE INQUIRY

The hereby Market Inquiry has the purpose of creating a meeting space between the State and the Industry that is open-ended, transparent and participative, which allows the industry to share its experience, the best practices and the innovations related to the information and user support services for public transportation globally.

In turn, all necessary information will be available to the Industry in order to understand the current situation and to identify the improvements needed, so the industry's valuable recommendations and proposals can be taken into account during the redesign process of Public Metropolitan Transportation System of Santiago.

5 BACKGROUND OF SANTIAGO'S PUBLIC TRANSPORTATION SYSTEM

5.1 Context

5.1.1 Integrated Public Transportation System

The transportation system of Santiago is operationally integrated, as also in fare management and its technological component.

- Operationally *Integrated:* it allows users to commute between Metro, Buses network, EFE services and any other transportation provider that may operate in the future, in order to complete their trip.
- Fare *Integrated*: the cost of access to transportation services is in virtue of the concept of trip, which is defined as the transfer of people using different transportation systems within a defined period. Each transportation service used in a trip constitute different sections and the fare scheme must recognize each section, in order to include them and define the final fare that will be charged to the commuter, according to the integration rules determined by the Ministry of Transportation and Telecommunications.
- Technologic Integrated, meaning devices, equipment, applications, systems, process and decision required for the provision of complementary services that are common, affect and have an impact on every actor in the System.

5.1.2 Liability of Transportation Service Management

The supplier of the transportation services is liable for the management of these services (buses, human resources, deliveries, systems, decisions, etc.). The Ministry of Transportation and Telecommunications defines the quality indicators which, if not complied with, may apply fines or deductions that are directly detrimental of the payment received by the transportation service supplier.

The Ministry's management and oversight requires personnel in site and the installation of certain technological devices on board, and in terminal, which will be in custody of and cared for by the supplier of the transportation services. In case of loss or accidents, the supplier must pay the technological operator the corresponding value for repair or replacement of the devices.

5.2 General Information of the Public Transportation System of Santiago

In order to envision Metropolitan Transportation System of Santiago it is important to consider the following:

The area of influence:

- The transportation system operates in the regulated area that includes the Province's 32 Counties of Santiago plus the district of San Bernardo and Puente Alto (the "Greater Santiago" Area). Other areas or communes may be incorporated in the future.
- In 2012, the estimated population of these 34 counties reached 6.2 million inhabitants.
- The system covers an approximate geographic area of 680 km2.

The transportation system:

- The main transportation system operator is Metro de Santiago, with lines 1, 2, 4 y 5, which consist on 108 stations
- and a 103 km. network. Future Line 3 (18 stations and 22 km length) and Line 6 (10 stations and 15.3 km length) are currently under construction, and extensions to Line 2 and Line 3 are under design.
- 7 buses transportation services suppliers are operative, with a fleet of approximately 6.600 units.
- There are approximately 11.300 active bus stops, from which 8.000 have shelter.
- There are approximately 120 paid zones, using 400 validation machines.

Access media:

- The access media to the transportation service is by a contactless card, hence, there is no Cash Payment on board.
- The fare card is the Bip! Card, based on a 1 Kb Mifare® Classic chip, which is bought by the users of the public transportation system for $1.550 CLP and $2.800 for a customized card.
- The Bip! card is the official payment method for buses and Metro de Santiago, with an established fare for all users and a reduced fare for students.
- There are different Bip! Cards: for the bearer that do not show the owner ID, Customized Bip! Cards (with user name and photograph), and the National Student Card (TNE).
- The minimum card load is $1.000 CLP and the maximum load is $25.500.
- There have been 52 million fare cards issued throughout 9 years.
- 5.1 million fare cards used in a period of one month.
- 145 million transactions per month and 5.5 million transactions take place in a working day, according to the DPTM Management Report 2013 and the Trip Origin-Destination Survey 2012.
- 91 million trips per month and 3.6 million trips per working day.

Fare Integration:

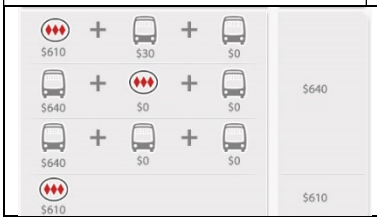
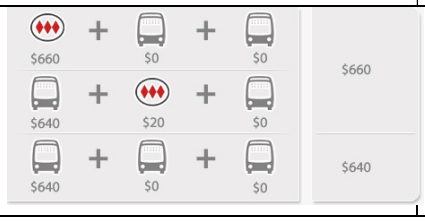
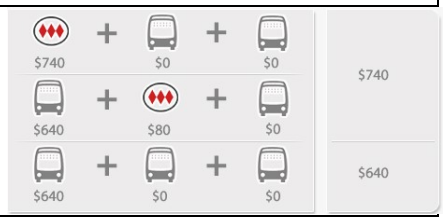
- To obtain the benefit of the integrated fare, the user must validate with the bip! card on each service used.
- When paying for the trip with any of the Bip! cards, the user may travel during 2 hours (120 minutes), from the start of the first stage of the trip or first validation- bip! (Traveling towards the same direction and with no trip repetition), with a maximum of 2 transfers (second and third validation bip!), only one of them can be used in Metro or the same service.

Sales Network Composition:

- High Standard Bip! Centers (25): in which the user can perform sales operations, card loading, balance inquiries, remote load activation, card replacement and balance transfer from a damaged card to a new card.
- Bip! Centers. (50): Offices specially designed for Bip! card sales, loading, balance inquiries and remote load activations in a determined schedule.
- Bip! Points (2.258): Located in different commercial establishments with a referential schedule.
- Metro Stations: 421 POS, 80 self-service machines and 105 totem poles for remote loading.
- Customer Service offices (5): Offices especially designed to answer and solve the users' questions or problems.
- Remote Loading for Banco Estado, Banco de Chile and BCI and general customers through webpay (credit or debit) on tarjetabip.cl and metro.cl
- PostPayment Agreement: It's a service through which a bip! card activates a special condition that allows the user to make up to 8 daily integrated trips (Bus + Metro + Bus, for example) within an 8-hour time frame. Currently, this service is provided by CMR-Falabella.

Fare Integration Schemes:

- Metro de Santiago fares are differentiated by the different schedules as per the following Figure (low, normal and rush hour)
- The current bus fare is $640

Low Fare (Off-peak) 6:00 – 06:29 hrs 20:45- 23:00 hrs	**Normal Fare** 06:30 – 06:59 hrs 09:00 – 17:59 hrs 20:00 – 20:44 hrs	**High Fare (Rush Hour)** 07:00 - 8:59 hrs 18:00 – 19:59 hrs
		

- High school and higher education students Fare is $210. Students may opt for the same integration benefits as the normal fare, namely, up to two transfers in a maximum of 120 minutes. No additional fare is charged when transferring from one metro line to the other. Students may use this benefit 24 hours a day, 7 days a week year-round.
- The preferential Senior Fare is $210 and only applies for Metro, during any time schedule with a maximum of two trips per day. This benefit is only applicable with unitary tickets (tickets with magnetic stripe), which may be purchased directly at the Metro ticket offices.
- When the registered balance in the mean of access is not enough to cover the value of the bus fare and according to hours restrictions, an "emergency trip" fare is applied, which is financed by the System and allows for one trip only. This emergency trip covers the difference between

the transportation fare and the balance registered in the fare card and is recovered in the next fare card load.

5.3 Current Situation of the Information and User Support Service

5.3.1 Information System for Santiago's Public Transportation Users.

Currently, the user information system is, for the most part, managed by the State through the Board of Public Metropolitan Transportation (DTPM).

One of the primary roles of the DTPM is to fulfill, in a timely and proper manner, with the transportation needs of public transportation users. In order to do this, it's important to have tools that allow for the full knowledge of these needs in a systematic manner, with the purpose of revealing the most important attributes of the System and acting on those that are not at a satisfactory level. In addition to gathering the user's opinions, there is a need for channels that deliver information which allows the user to make a better use of the System and show the changes that have been done throughout time.

5.3.2 Information and User Support Channels

These are:

- Call Centers (hotlines)
- Transport Services Supplier's User Support Channels
- Online Information
- Statistic information in stops

The features of each one of these channels are the described below.
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5.3.2.1 Call Center (hotline)

Santiago's Public Transportation Call Center operates 24 hours. It's a service provided by a third party, whose role is to deliver the system's information and receive user complaints and suggestions. In addition, these same hotlines may be used to access information, ask questions and submit complaints associated to the Bip! card. During 2015, a total of 183.072 calls were received, 14% less than in 2014.

On the other hand, Metro de Santiago has a hotline service where complaints and suggestions may be submitted, as well as questions on the state of the service and lost and found, among others.

5.3.2.2 User Support Channels for Concession Companies

Since 2014, all suppliers of bus-provided transport services have their own User Support Channel, through which users may submit their questions, complaints or suggestions. These channels consider telephone or virtual assistance (webpage and/or e-mail). The complaints hotline is formally established through these channels; and DTPM, together with the Office of Information, Complaints and Suggestions (OIRS) of the Under-secretariat of Transportation are continuously working on the compliance control of the defined standards.

During 2015 these channels responded to 6.226[1] requirements.

[1] Source: Informe Mensual de Requerimientos Empresas Operadoras

5.3.2.3 Online Information

For a good decision-making related to public transport journeys, it is important to have the most suitable, trustworthy and personalized information available. This allows the public transportation users to make decisions about the location of the nearest stop where their trip will begin, the chosen transport service, the arrival time of the bus, the nearest bip! loading point, for instance. It has implications on each trip's duration, the waiting time at the bus stop and the number of transfers to be done. A quick and efficient way to obtain this information is to access this information online, through webpages, specific apps and social media.

5.3.2.3.1 Webpage

There a number of webpages where you may find different types of information related to Santiago's Public Transport System. Among which we can find:

- www.transantiago.cl
- www.dtpm.gob.cl
- www.tarjetabip.cl
- www.metro.cl

On 2015 Transantiago.cl webpage was redesigned to a more adaptable and responsive design, meaning its content adapts itself according to the device used to visualize it.

The impact on visits regarding a responsive web site (SWR) for Transantiago.cl can be measured by the following data:

- Total sessions on 2014 (without SWR) - 2.977.466
- Total sessions on 2015 (SWR implemented since may) - 3.677.977

- May sessions on 2015 (last month without SWR) - 259.326
- May sessions on 2016 (SWR implemented) - 507.238

- Accesses through Cell phones on December 2014 (without SWR) - 42,97 %
- Accesses through Cell phones on December 2015 (SWR implemented) - 66,23 %

- Accesses through Cell phones on May 2015 (last month without SWR) - 45,89 %
- Accesses through Cell phones on May 2016 (SWR implemented) - 73,00 %

- Average duration of sessions on December 2014 (without SWR) - 00:02:14
- Average duration of session on December 2015 (SWR implemented) - 00:03:13

5.3.2.3.2 Bus Arrival Time Predictor

The first application that allowed users to view online-real time information, in June 2010, was the text messaging service "At what time does my bus arrive?" (Bus SMS). By setting up the bus stop number, and the transportation service number, the users get back the estimated times of arrival of buses to this specific bus stop. This predictor is also available on via web and other applications.

5.3.2.3.3 Other applications

The updated information offered by the Board of Public Metropolitan Transportation regarding the localization and arrival time of buses, location of bus stops, bip! loading points and others, has allowed to private developers to deploy a series of applications for public use, especially for smartphones, that allow to multiply the options that users have to improve their trip experience. These apps also increased the quantity of inquiries in a critical manner.

The smartphone applications that were active by December 2014, are the following:

- Google Transit
- Moovit
- iTransantiago
- TransantiagoMaster
- BusChecker
- Dondeestalamicro
- PIV
- Micro
- Microtime
- Cuantofalta
- Paraderos
- Transdroid

Additionally, Metro has its own app: "MetroMobile", which can be downloaded for free in any Android OS smartphone or iPhones. The app displays online information on the state of the Metro network and each one of the lines, and also allows the user to receive alerts in event of any special conditions, to organize the trip, check the bip! card's balance, etc.

5.3.2.3.4 Social Networks

Over the years, social networks have become one of the most important communication tools,, mainly as a channel of information and user support. Consequently, since 2011, Santiago's Public Transportation System has incorporated these social tools to reach a high percentage of users and to provide them with the information they need to improve their trip experience and, in turn, get feedback from the users, receiving their suggestions and questions on waiting times and journeys.

In this context, various information channels like Facebook, Twitter and Youtube were created to deliver information -in a timely and real-time manner- about issues as diverse as detours (planned and unplanned), trip modifications, information about the bus operation status and other news that could affect the users.

On the other hand, Metro de Santiago also has its own social network channels. Through Facebook, Twitter, Youtube and Foursquare platforms, the users are informed on the service status, in order to plan their trips and make the best decisions.

5.3.2.4 Statistic information about stops

Currently, the Public Transportation System of Santiago has different on-site information support on the surface and underground infrastructure. In the case of stops, these supports are formed by a paddle, information panel and valance, which are one of the most accessible channels for users.

The following Figure shows and example of information delivered by Paddle support.

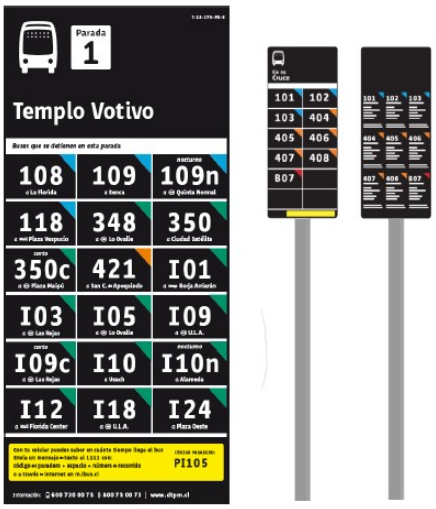


Figura 1: Paddle support

¡Error! No se encuentra el origen de la referencia. bellow show the group of information and user support channels, of own domain (in red) and delivered by a third (in grey).

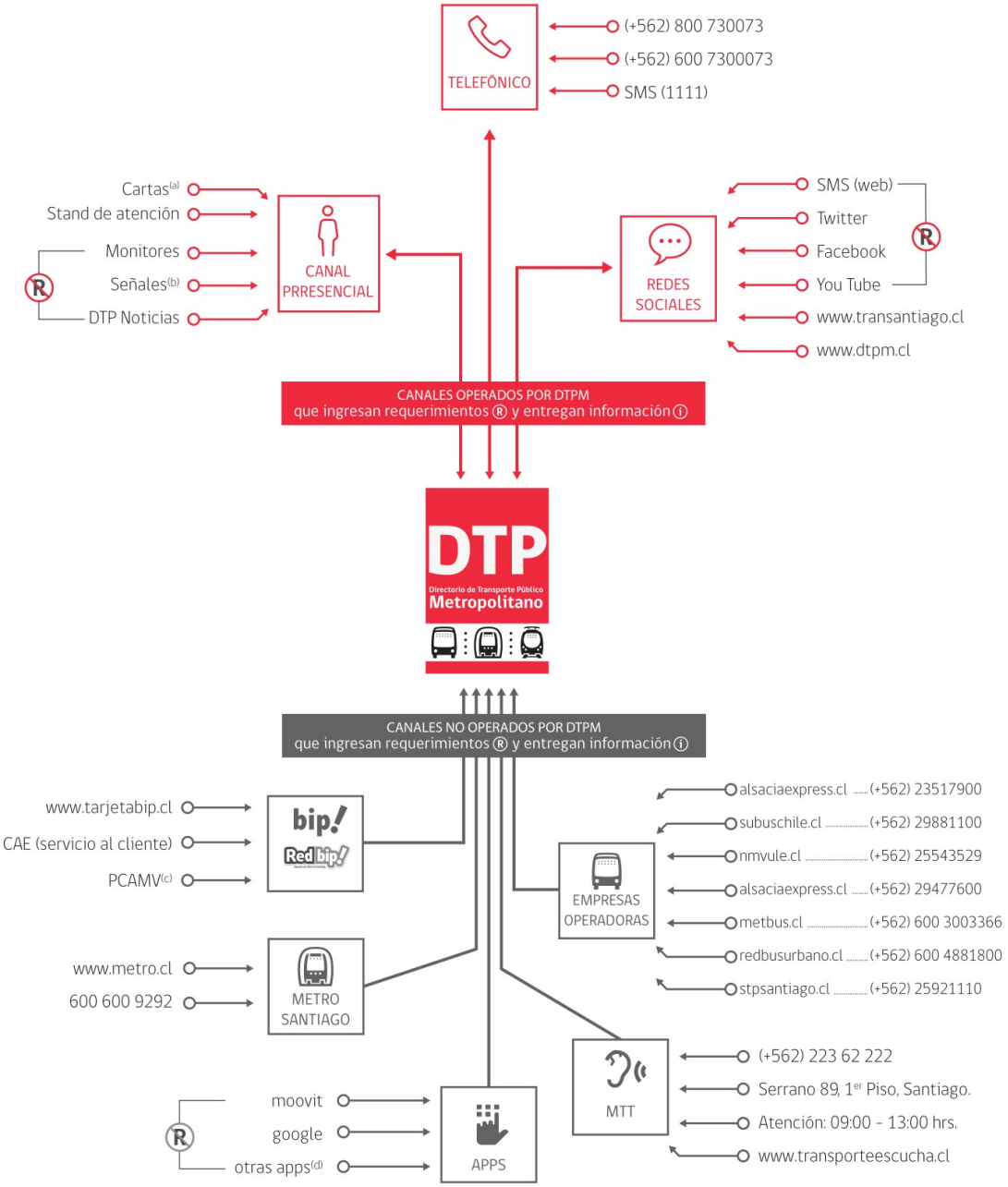


Figure 2: Information and User Support Channels

5.3.3 Description of the deployment and dissemination process of information for users

The implementation of the Operational Program (PO) implies updating the information at the access points to public transport, bus stop points, buses, webpage system, informative graphic material, and operation monitoring tools. This information update must be delivered displaying the modifications to the users, the system's regulating entity, the suppliers of complementary services and other external entities.

The process consists in sharing with the users and agents described above, the operation conditions established in the current PO program and its modifications, as well as the changes that these programs experiment due to operation and physical infrastructure eventualities.

The routes, assigned stops, the bus dispatch by period and other operational features are obtained from the operation program -which determines the supply of each transport service supplier- from which the total kilometers that the buses must travel are determined.

Based on the information generated by the operation program, the system displays the detail of each service, i.e. the identification of the service and name code, including others related to the supply of services: details of routes, frequency, transportation capacities, bus schedules, distances and velocities of services, stop sequence, bus starting points, extraordinary journeys, etc.

Among the activities executed by the implementation of the Operational Program we may find:

- Validation of the new transport services' codes.
- Validation of the location of new Stop Points.
- Validation and modification of annexes and creation of after products (shapes and parameter consolidation).
- Creation of variant route outlines.
- Loading of Parameter Consolidation and infrastructure base in web interfaces.
- Sign-making process for bus stops.
- Signage formatting and printing.
- Signage pole installation process for bus stops.
- Interface creation process for updating web applications.
- Updating source files for transport and prediction display services (Google Transit, Moovit).
- Synoptic Updating
- Predictor Updating.
- Route Library Updating
- Development Process of Graphic Material (stickers, bus stop booths, leaflets, route maps, posters on buses and bus stops, banners).
- Information dissemination to users and other parties.

5.3.4 Information, Dissemination and Education Campaigns

The information campaigns' objective is, besides from reporting the significant changes in the system, to educate citizens about the importance of public transportation and share all the improvements that benefit users.

6 Conceptual Description for Information and User Support Services

6.1 General Objectives

The objective of the Metropolitan Transport System of Santiago Information and User Support service is:

1. To contribute to reach an economically sustainable public transport system that assures a proper quality service and operational continuity.
2. To improve the user's trip experience to promote the use of public transport.
3. To assure universal access and information coverage of the public transportation system.
4. To deliver trustworthy, timely and understandable information in order to reduce uncertainty, facilitate coordination and support the user's decision-making process.
5. To provide integrated and customizable information for citizens to be able to adapt according to their transportation needs.
6. To support the user's decision-making process when in emergency situations and massive events.
7. To facilitate access to the system's information in order to support the public transport system's research for efficiencies.
8. To deliver a high standard user support service that responds to the users' needs.

6.2 Information and User Support Service in Public Transportation System.

One of the most significant elements which, at the same time, allows and enables the exploitation of transport systems in cities is the Information System, mainly because it is the system's "visible face"(frontpage?"), i.e. the cover letter and door of access to the transport system.

Consequently, its service and quality level will have a positive or negative impact on citizens' perception of the public transport service that is being delivered; for that matter, all human, physical and financial efforts made for operational improvement of the transport system will be futile if the user interfaces and communication channels are not duly established.

6.2.1 General Features for the Information and User Support Service

- Available 24/7, 365 days a year.
- Accessible at all the trip's stages (before the trip, transport service waiting time and during the trip).
- Simple and easy to understand.
- Trustworthy, useful and timely.
- Instantaneous
- Customizable according to different users' needs.

6.2.2 Definitions and Basic Elements of an Information System

Before we analyze the information systems applied to transportation, we should remember some basic concepts, starting with: What is a system?

6.2.2.1 System

Group of components jointly connected in an organized manner. Components are affected once they are in the system and the system's behavior changes if abandoned. This organized group always has an objective or role. The components of a system can be physical objects, and they can also be abstract concepts.

Within an information system, basically four elements interact: Information, Sender, Receiver and the Media, all of which are critical elements for the system to function properly, and the absence of any of them will make it impossible for the system to reach its objective.

6.2.2.2 Information

Configuration of data exchanged between the Sender and the Receiver. Information can be transmitted in different formats, essentially depending on the capacities of the Sender, Receiver and the Media. For example, within the information systems applied to public transportation, information could be the bus arrival time, minutes until arrival, the bus stop, the itinerary of a trip, etc.

6.2.2.3 Sender

The sender is the agent who sends the information. The Sender is the source of information, whose objective is to deliver this information to a Receiver. In the case of information systems applied to transportation, the Sender could be represented by the administrations that manage infrastructure. These administrations put up different signs in order to transmit information to users.

6.2.2.4 Receiver

Is the person or entity who receives the information transmitted by the Sender. Once the sent data is received, a cycle ends in the information transmission mechanism.

Usually, the Receiver can simultaneously act as a Sender, thus a bidirectional exchange of information is possible, alternating the roles of Sender and Receiver.

In the case of the Information Systems applied to public transportation, the Receiver would be, for example, a bus passenger that is traveling and receives messages indicating the next stops.

6.2.2.5 Media

It is the channel through which information is transferred. In order to go from the Sender to the Receiver, information must travel through some media. Within the Information Systems applied to transportation, we have different media; hence information is able to travel. For example, we can display traffic signs, listen to radio messages, and see graphs with smartphones inside our cars, etc. This element is in a continuous development process. New technologies increasingly allow there to be more media diversity and more information to be transferred in shorter time period.

Figure 2 shows a communicational model scheme:

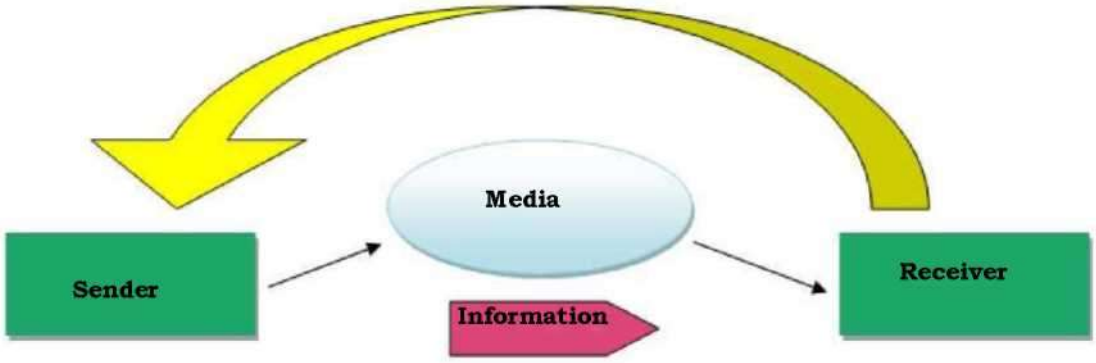


Figure 2: Communicational Model

6.2.3 Description of the Trip Process

This process has the following three stages:

Stage 1 – Start of the Trip
Stage 2 – Development of the trip
Stage 3 – End of Trip or Transfer (for example: Bus, Metro, others)

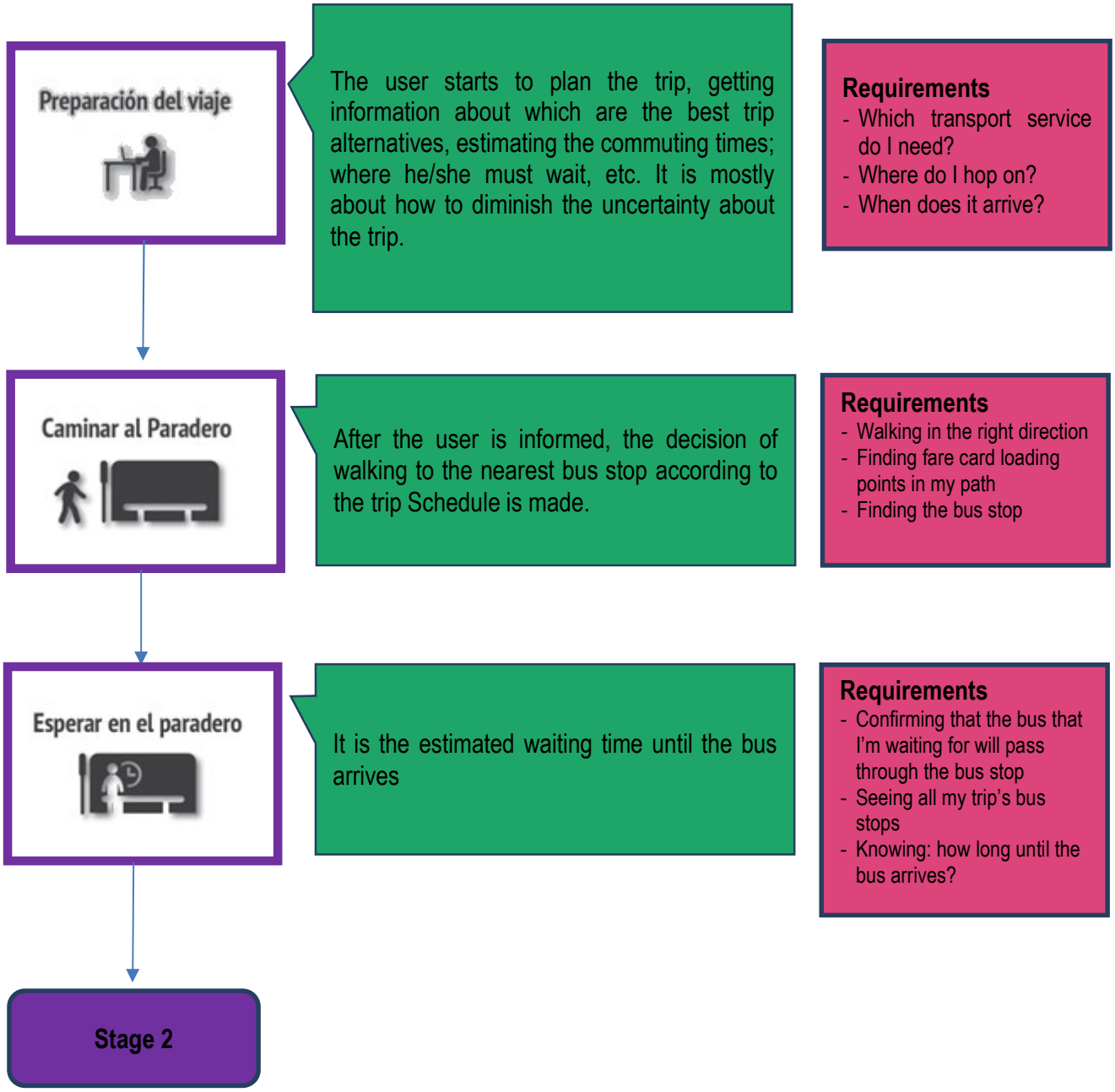
Each stage has its own corresponding actions in which the user may request information during the development of the trip.

It is important to mention that on each stage and transversally, or by the end of the trip, post sale activities can be carried out, for example: make a claim, make a suggestion, congratulate, require a load service from the payment mean, among others.

All stages, action details and the user's main information requirements are specified and graphed below:

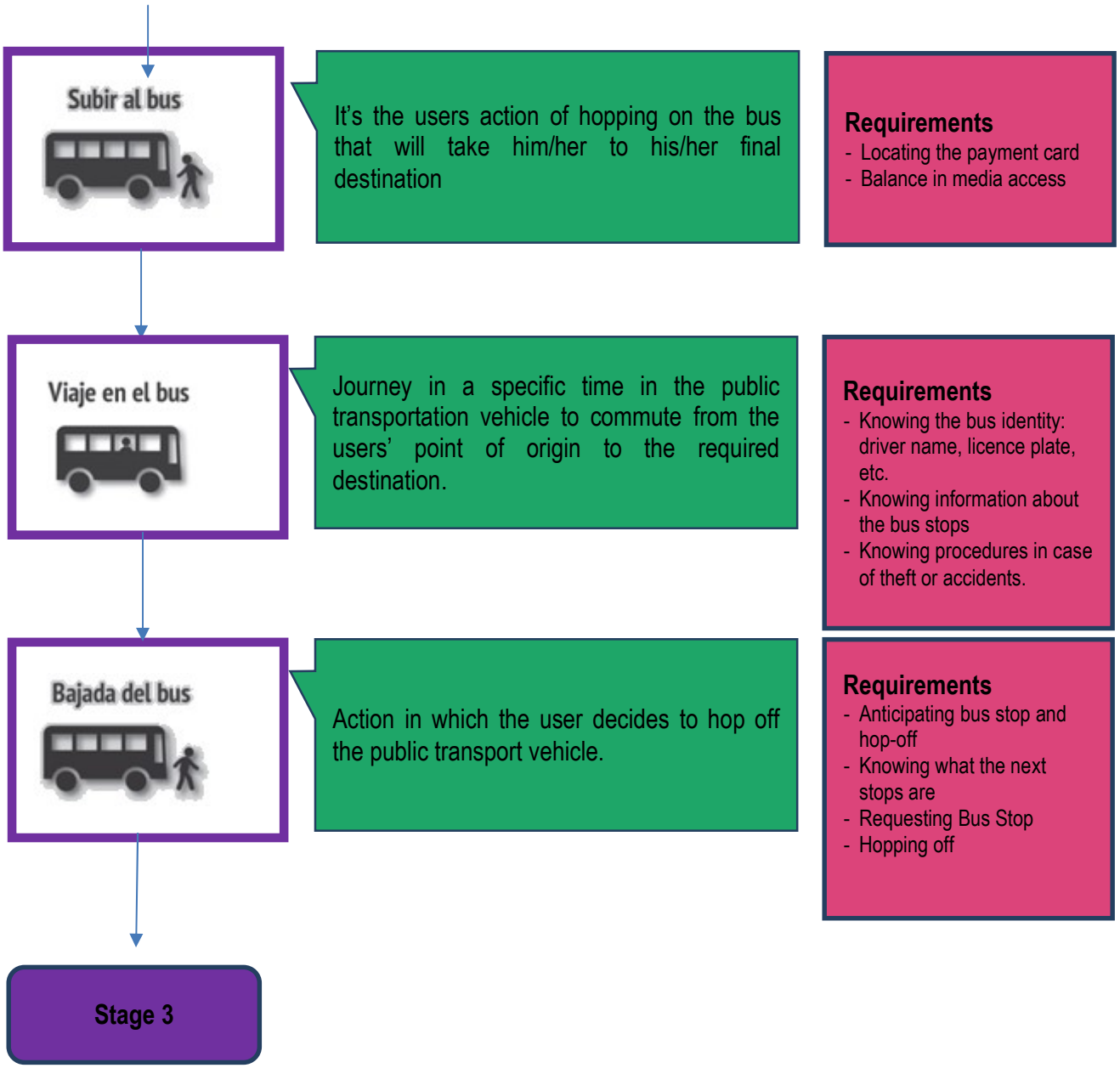
Stage 1- Start of the Trip

This phase considers from the moment in which the public transportation user shows the intention of traveling in public transportation until finishing the action of waiting at the bus stop.



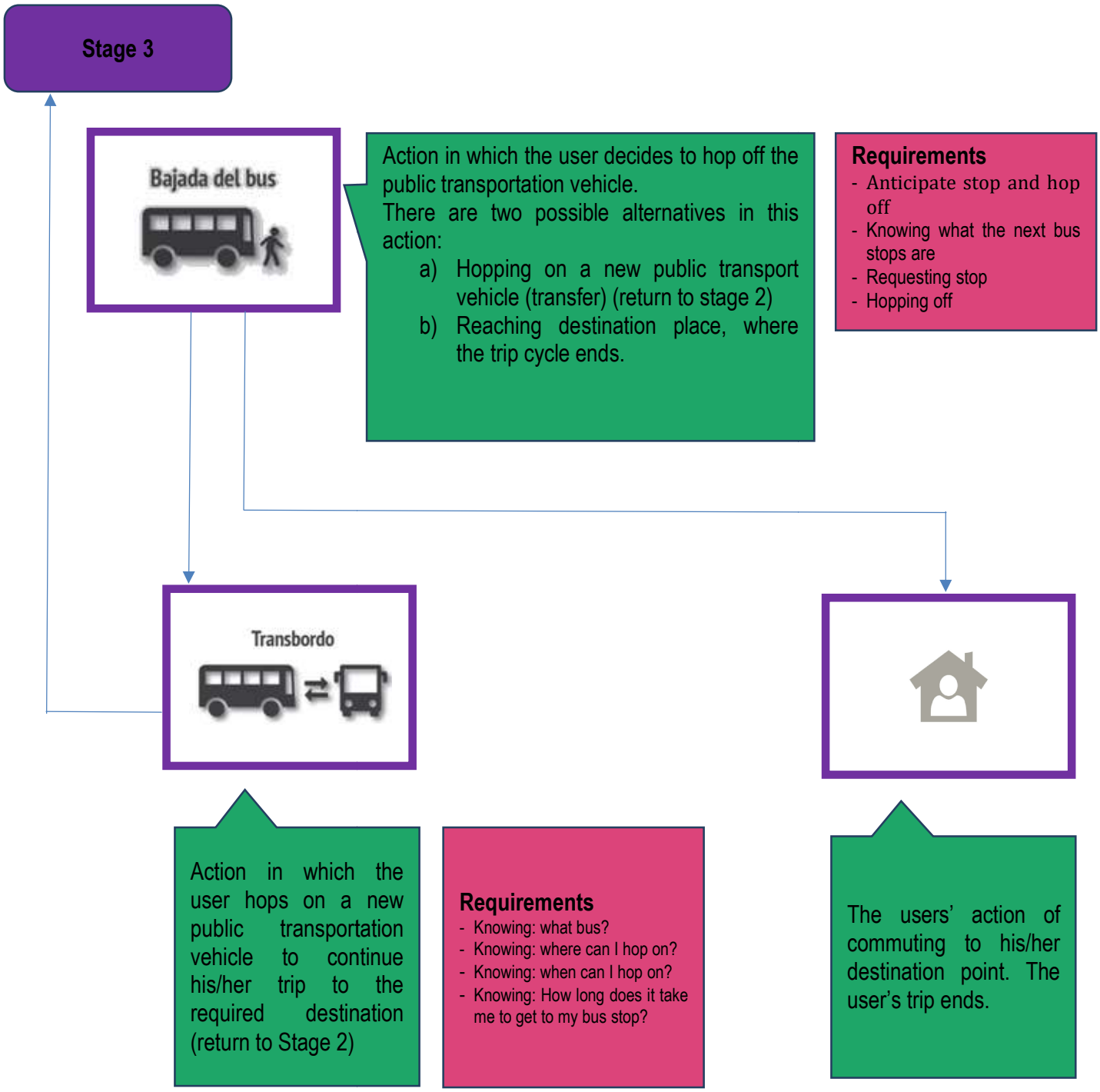
Stage 2 – Development of the trip

This stage integrates the actions since the public transportation user hops on the bus until the user hops off the bus.



<u>Stage 3 – End of Trip or Transfer</u> (for example: Bus, Metro, others)

This stage considers the action when the user hops off at his/her corresponding destination bus stop (end of trip) or when he/she hops off at a bus stop to transfer to another public transportation service. (Stage 2).



7 Inquiries to the Market

To facilitate the delivery of background information and the subsequent analysis of answers, the herein inquiry to the market on User Information and support service has been structured based on specific scenarios, which presents the main aspects to be explored in a future user information service. Each scenario has a set of related questions.

7.1 Scenario 1: Information to improve the traveling experience.

One of the main improvement proposals for Santiago's Public Transport System aims to reduce the uncertainty that users face regarding their commute, and to facilitate coordination among the entities responsible for transportation. Therefore, the delivery of timely, complete and truthful information to users will improve and have a positive impact in the user's perception of the system and will, in turn, improve public transportation travel experience. Moreover, recognizing that the idea of a "travel experience" is wide and may be addressed through multiple approaches, we will focus on the three previously detailed stages, i.e. from when the user has the intention of traveling in public transportation until he/she hops off at the bus stop nearest to their destination.

Furthermore, improving the delivery of information of services to users and making it timely and efficient for decision-making will create more reliability on the public transport system and, in turn, the travel experience is improved, since this leads the users to be able to plan their commute and be informed during the trip, in order to manage their own schedules.

Regarding the aforementioned, and in your opinion:

1. What requirements must the fleet management system comply in order to provide the proper information to the user information system, in order be able to deliver complete, efficient and real-time information?
2. What are the international standards used for information processing and management in public transport?
3. What technical aspects should be considered for that requirements from the information systems users do not impair the performance and normal operation of the fleet management tool?
4. What are the processes involved in static (non-digital) and real-time information management for users?
5. Considering the different trip stages, what are the minimum features a user information system must have, for it to be considered complete?
6. Considering the different trip stages and infrastructures or supports present in them, which would be the best way of disseminate information to system users?
7. What are the internationally used service level standards for user information systems?

7.2 Scenario 2: Universal Access Information

Among public transportation users we have a wide range of users that receive information (tourists, people that are visually, hearing and physically impaired); hence, we must consider that the transportation information system must reach all these types of users. In this manner, even though the media through which the information is sent may vary, the objective is that our users receive the information; hence, the accessibility of static and real time information is a critical aspect within public transportation improvements. At the same time, the accessibility of this information must comprise the

three stages of the trip route. If we are able to inform this group of users, we can guarantee that the information is accessible to the rest of the users.

Regarding the aforementioned, and in your opinion:

8. What requirements should the fleet management tool have in order for the user information system to deliver information in different formats (audio and visual)?
9. Which standards are used for processing and managing information for users with disabilities (physical, hearing and visual impairment)?
10. What are the minimum features that a user information system must have in order to deliver information to users with disabilities? (physical, hearing and visual impairment)
11. What would the procedures be in order to manage real-time and static (non-digital) information- to satisfy the need of public transportation information of users with disabilities?
12. Is there a measuring mechanism that enables to value the accessibility of information in a public transportation system?
13. Considering the different trip stages and infrastructures or supports present in them, what would be the best way of displaying information to these types of transportation users?
14. Could you name any successful cases in terms of universal access information systems in transportation?

7.3 Scenario 3: Information for Customization

Even though a great amount of data generated by the transportation system is captured, later processed and finally consumed by information systems like portals and/or applications to provide users with highly useful information; it is expected, at once, that within all the whole range of information delivered to public transport users, not all of it is necessary or relevant in a determined moment, hence it would be of great value that the information systems could offer customization, where the user has the freedom to define the information that is actually useful to them and, at the same time, modify his/her choices according to his/her location, needs, schedules, etc. An information system that is malleable or flexible to the requirements of every public transportation user.

Regarding the aforementioned, and in your opinion:

15. What requirements should the fleet management tool have in order for the information system to be customizable by the users?
16. What are the minimum features that this customizable user information system should have? What would be your recommendations to address this challenge?
17. Regarding users with physical, hearing and visual impairment, what would the information system require for it to be customizable for them?
18. What would your recommendations be in terms of information customization technologies?

7.4 Scenario 4: Information for Emergency Situations

The public transportation system, as a city's basic service, is permanently exposed to collective-risk situations, emergencies and natural or man-made disasters and catastrophes. Even though the provision of transport services may be partially or fully interrupted depending on the event, it seems fair to progress towards a public transportation system whose mechanisms and tools enable it to collaborate and contribute to the mitigation and/or management of the emergency that affects a certain domain. In this context, the user information system is a system component that has a determining role.

Confronted with an emergency situation, the information regarding the emergency situation and the impact on the transportation system; i.e. place of emergency, type, affected services, available services, detoured services, temporary routes, among others are critical to support the citizens' decision-making process, to strengthen reliability on the system and, overall, to facilitate the creation of a rapid, timely and proper answer to those affected by the emergency. This way, we wish to explore and count with the industry's experience on solutions that support the public transportation information management processes when faced with emergency situations.

Regarding the aforementioned, and in your opinion:

19. What specifications/requirements must the fleet management tool have in order to implement a user information system in an emergency situation?
20. What are the standards used for emergency information processing and management?
21. What features does the user information management tool have in terms of emergency information management? Which processes are supported by the tool?
22. According to international experience, what do you recommend in terms of the roles of the involved actors (State, transport service suppliers, etc.) in an emergency situation and the protocols/rules that are activated in a transportation system's resource management and, specifically, in relation to the components associated to the information service?
23. Which technological architecture, from the fleet management tool to the information system, field devices (onboard information, information at bus stops, and others) and communication system is recommendable to assure continuity of the information service in an emergency situation?
24. What are the internationally used service level standards for these type of system?
25. Depending on the impact level of the event or emergency and according to international experience, Which information channels and mechanisms must be prioritized to assure maintaining an information service that supports the users' decision-making process during the emergency situation?

7.5 Scenario 5: Integration of Public Transportation Information

International experience has a strong tendency of advancing towards intermodality in public transportation, i.e. the combined use of media such as bus, metro, train, etc. with the objective of achieving further efficiencies, extending the system's coverage, improving the quality of service, but also as a strategy to achieve sustainable transportation in the domain. However, in order for part of the potential benefits of Intermodality to be noticed, it will be critical to have an information system capable of offering a service to those users that activate it for their trip's best option, either unimodal or intermodal.

In case of the city of Santiago, the public transportation system is intermodal, integrating a network bus and Metro network and other means of transportation in the future. In this context, we wish to explore mechanisms are that allow to strengthen the integration of operational information between the modes that make up Santiago's public transportation system with the purpose of promoting the supply of intermodal information services for users.

Regarding the aforementioned, and in your opinion:

26. What specifications/requirements must the fleet management tool have in order to implement an intermodal information system for users?
27. What are the standards used for intermodal information processing and management?

28. What are the features of the intermodal information management tool? Which processes are supported by the tool?
29. Given the existence of different transportation service suppliers, bus and Metro, and the potential future integration of new suppliers, What are the main aspects and components of the information system that must be cared for or safeguarded in order to assure that the intermodal information service delivery is kept reliable, useful and in real-time?

7.6 Scenario 6: Static Information (offline) and associated processes.

As part of the information service for transportation users, there's a particularly critical process given that information reliability, utility and opportunity are at stake; we are talking about the **static information management** process (e.g. informative poster and Paddle) **at transportation access points** (e.g. bus stop, buses, terminals, etc.). One of our main concerns is that given the dynamism and the permanent changes that the transportation services face (schedules, routes, time of arrival to bus stops, etc.) it's necessary to assure that the process of displaying, updating and maintaining static information is done in an efficient, rapid manner by safeguarding that the information is correct according to the transportation point of access.

Regarding the aforementioned, and in your opinion:

30. Considering each trips stage. What are the currently existing design standards for public transportation information display at points of access?
31. What are the currently existing tools to facilitate the design and creation of static information in bus stops (Paddle and informative poster)?
32. How do we integrate the design tools with the fleet management tool in order to reach an efficient process of information disseminate?
33. According to the best practices identified at an international level, what recommendations can you make regarding technological support and processes for displaying, updating and maintaining static information that assures the timely delivery of information to the user, efficiency (less time and resources as possible) and efficacy (information matches physical place in terms of form and context) for the next cases:
    a. Static information in booths (bus stops)
    b. Static Information in informative poles (bus stops)
    c. Static information in buses
    d. Static information in terminals
    e. Static information in other spaces

7.7 Scenario 7: Citizen-focused Information

One of the most concerning aspects when designing the services that will be supplied to the citizen are seeing if they respond to users' needs and if they are compressible enough by these (information simplicity).

Regarding the aforementioned and based on your experience:

34. What are some international practices that have been distinguished for delivering a comprehensible and useful information service for the wide range of user profiles?
35. Which information and services are highly valued by users in throughout the different stages of the trip and in emergency events and situations?

36. In how much detail and in which manner does the user require the public transportation information?
37. Considering the different stages of the trip (on 6.2.3), what type of support has a high user approval rate in the following contexts?
    a. Stage prior to the trip
    b. Points of Access (bus stops and booths)
    c. Buses
    d. Terminals
    e. Other spaces (e.g. universities, airports, touristic centers, etc.)

7.8 Scenario 8: Public Transportation User Support Service

The user support service is complementary to the transportation users' information service. This service's objective is to timely provide assistance to the needs and requirements of the public transportation users. Currently, in this assistance service there are various involved actors (transportation service supplier, loading network, DTPM, Metro, among others). All of these rely on independent assistance systems. The prior considers that management of requests is subject to processing taking up more than foreseen (extensive answering times), that it may be lost during the transfer, etc.; hence, there is a chance that the requests don't have a timely answer or, in an undesirable case, do not reach the user, consequently not complying with the objective of solving their requirements. Due to the previously stated and in order to implement a quality and efficient user support service which answers all different requirements from users, we make the following inquiries.

Based on your experience:

38. Based on the previous information and considering that there are currently different actors, through which model would you address the users' requirements and needs?
39. How would you address the user support procedures?
40. How would you assure that the users obtain an answer to their requirements? In that sense, which critical processes would we have to assure?
41. Is there a standard to manage a quality user support service in public transportation?
42. Could you name any successful international case in relation to user support service in public transportation?

7.9 Other general inquiries

The current contracts for complementary technological services will be in force until February, 2019, and the new tendered services will be presented during a considerable time period, preliminary estimated between eight and ten years. By virtue of the foregoing and in the face of the reality that these services must evolve and adapt to the changes produced either by new needs or technological advances:

Based on your experience:

43. What would you recommend in order to mitigate the effects of technological obsolescence in a long-term contract, and assure the continuous improvement process of the system's services and components?
44. How would you recommend addressing the scalability of the system to support growth in terms of incorporation of buses, transport service suppliers, terminals, users, among other aspects?

45. In your opinion, what are the current technological advances and trends in terms of information and user support services?
46. How would you propose an integrated solution for the information and user support service? What are the modules and features to be considered?
47. Could you give referential values and estimative implementation deadlines based on the herein information for each one of the services?

Within the scope of this consultation,

48. What relevant aspects related to telecommunications should be considered in order to enable the aforementioned services?

In the scenario of having to prepare a proposal for these services,

49. What other information, documentation, data, etc. do you require for proper project sizing and planning?

If you consider there is any relevant issue which has not been covered by this document, please feel free to add it to your answer.

Remember, you may attach all the additional information you consider useful to your answer: catalogs, brochures and others.