PARAMETERS FOR EVALUATING QUALITY STANDARDS IN INTERURBAN COACH TERMINALS

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SUMMARY

This paper presents a set of parameters for assessing the quality of customer service provision to users of coach terminals belonging to the Interurban Road Passenger Transport System known in Brazil by its Portuguese acronym “STRIP”. Based on the general theory of systems, the semantic network of transportation planning, the human needs theory and the two-factor theory, these parameters enable the transport system planner to identify the quality standards of a given terminal and those aspects that must be improved for the terminal to perform its role satisfactorily in the overall STRIP system.

1. INTRODUCTION

The System of Interurban Road Passenger Transport - STRIP is the set of elements, actors and interdependent activities which have the common objective of meeting the interurban trip needs of its users. A STRIP that provides good transport for the users depends on the good quality standards of all its elements, which in turn depend on their coordinated management. Among the most important STRIP-structuring elements are the passenger terminals, but in Brazil there is little articulation of their management with other components of the system or among terminals themselves. To illustrates that statement, there are actually different spheres of management for the STRIP terminals (States/Federal District, municipalities and private initiative), for the interurban transport services as such (Federal Union, states and Federal District) and for the highway networks that such services make use of (Union, States/Federal District and municipalities) and their efforts are not always in harmony with one another. As a result, the system as a whole becomes vulnerable insofar as it cannot necessarily guarantee users good quality services from the start to the finish of the journey. In that line of reasoning, how can the person responsible for the solution of a problem, such as the federal administrator of the services, ensure good quality services for users under his responsibility if he cannot directly interfere in the management of the terminals and state highways and municipalities that are all involved in the customer service provision without infringing the constitutional principle of federal autonomy?

The first step in any integrated planning process is to acquire adequate knowledge of the current situation of the system in order to design effective strategies for obtaining a more ideal situation. In regard to the STRIP infrastructure, it is widely known that the general conditions and state of conservation of approximately 60% of paved federal and state highways can be classified as either fair, bad, or very bad (CNT, 2011). As for the Brazilian terminals, there is no formal information on the state of customer service provision to users. Thus, any process seeking to design quality control tools for the STRIP must start off by establishing parameters for an effective assessment of the quality level of the terminals in order to make any quality control plan for them feasible. Establishing those parameters is the scope of this article.

2. INTERURBAN PASSENGER BUS TERMINALS

A subsystem of the STRIP, the interurban passenger bus terminal is a physical and operational structure that permits the boarding, disembarkation and connections of passengers using intra-city and intercity road transport services. That means they constitute nodes in the interurban road transport network for the articulation and distribution of trips and as such they are structuring elements of the STRIP (Soares, 2006, Dunham, 2008 and BRAZIL, 1998). To achieve its ends, the terminal is functionally divided into five sectors: the operational sector, where operational activities such as the ticket sales, boarding and disembarkation of passengers and the circulation of buses take place; public areas designed to accommodate users and address their general needs in the periods preceding and succeeding boarding and disembarkation, such as waiting rooms; public services areas for the activities associated to protection and assistance services for terminal users provided by public or private entities; the administrative sector, formed by the areas where activities that come under the exclusive aegis of the administrator associated to terminal administration and maintenance are carried out; and finally the commercial sector where commercial entities are installed on the terminal premises (DNER sub, 1987). Figure 1 illustrates the structure of an intercity road passenger transport terminal.

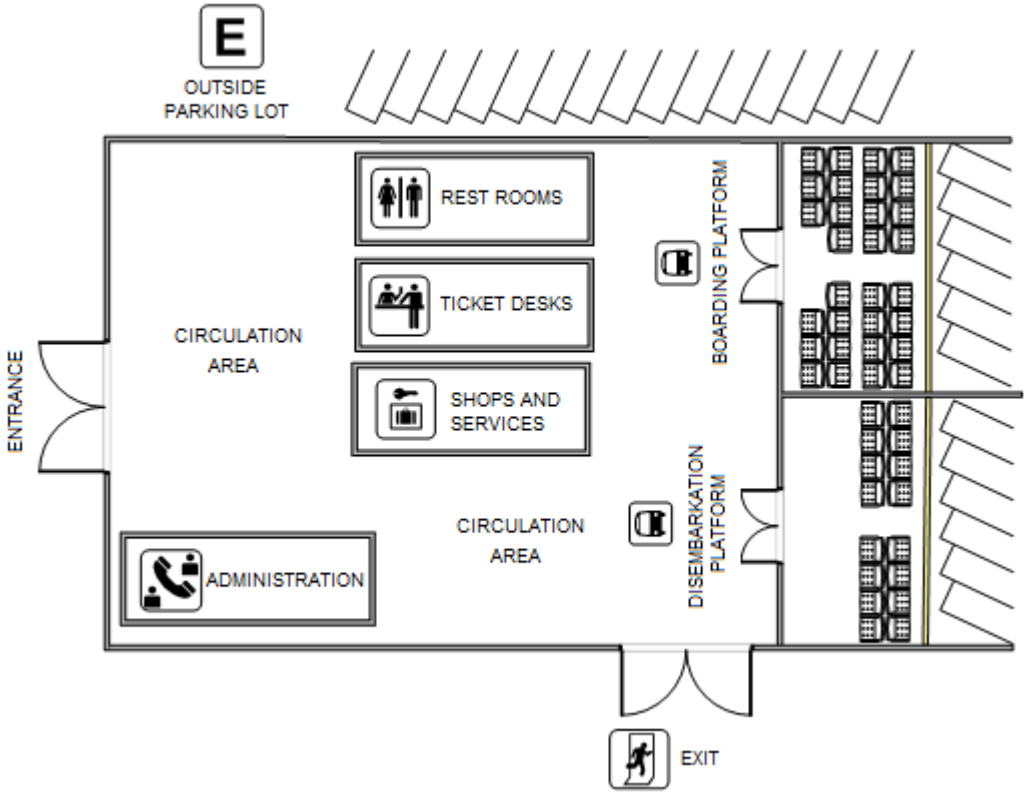

Figure 1- Basic functional components of an intercity road passenger transport terminal (adapted from Dunham, 2008)

3. PARAMETERS FOR STRIP SYSTEM TERMINAL EVALUATION

Determining parameters for an effective assessment of the quality level of STRIP terminals requires the prior establishment of a solid theoretical basis to underpin the eventual propositions. There now follows a presentation of the theoretical foundations for the parameters that will be presented later.

3.1 Theoretical Fundamentals

The theoretical foundations that underpin the determination of the STRIP terminal evaluation parameters are the general theory of systems (GTS), the semantic network of transportation planning, the human needs theory and the two-factor theory.

3.1.1. General Theory of Systems

The General Theory of Systems is an interdisciplinary theory that endeavors to unify principles in a way that makes it feasible to interconnect the spheres of the various separate sciences so that progress made in any one of them can benefit all the others (Chiavenato, 2004). It provides the researcher with a holistic vision of reality rather than the fragmented one offered by applying the principles of physics, chemistry, biology etc. in isolation. Its goal is the formulation of valid principles for systems in general, whatever the nature of the elements that compose them or the relations or forces which exist among them (Churchman, 1968 *apud* Azambuja, 2004).

The focus of this approach is the open systems addressed by the GTS as being a set of parts in constant interaction and interdependence, forming a synergistic whole (the whole is greater than the sum of its parts), targeted for certain purposes and which have permanent relationships of interdependence with the environment (understood as being the dual capacity of influencing the external environment and of being influenced by it) (Chiavenato, 2004). This interdependence with the environment takes place in cycles of the type input→transformation→output (Figure 2). For such systems to function they must be supplied with a series of inputs in the form of energy, information and/or material from the environment of which they are a part. For the systems to reach achieve their goals or complete their tasks, the inputs must be processed and returned to the environment constituting the systems' outputs and these last must be consistent with the objectives of the cycle. To ensure the latter condition there is a feedback mechanism that compares the output with a previously established standard and, if there are any deviations, makes the necessary corrections at the entry point of the system so that the operation occurs within the preset standards and the desired output is obtained.

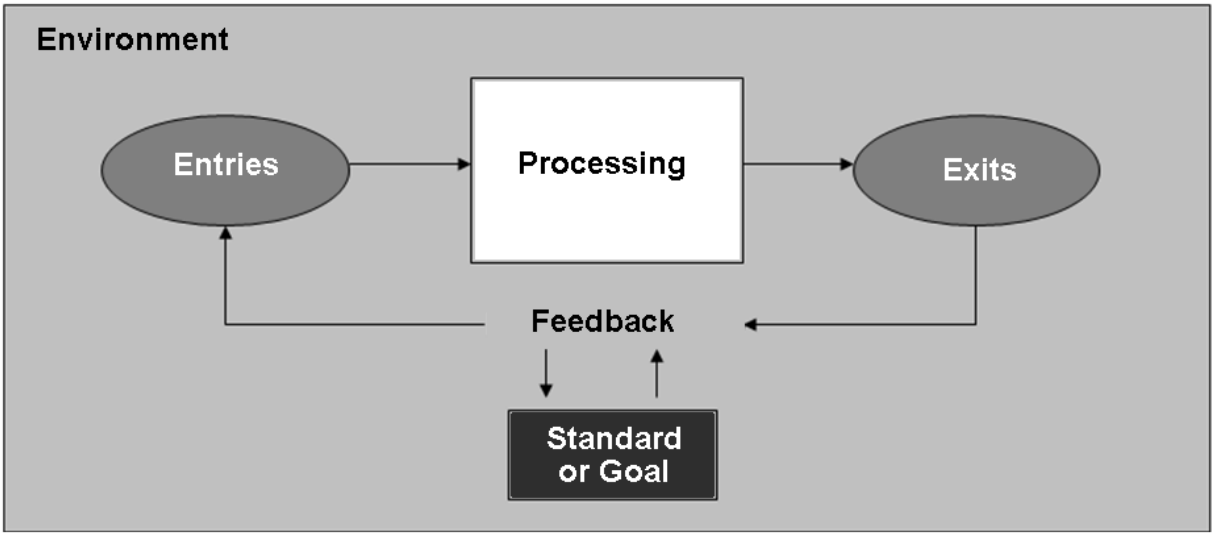

Figure 2 – Functional cycle of an open system

STRIP terminals have various features that enable us to view them as open systems. The first such feature is their operation which is essentially systemic by nature. As a subsystem of the STRIP, they have a general purpose or function to be carried out (in general, ensuring the quality of the experience of departure or arrival of passengers) and to that end they perform their tasks on the basis of dependence and interaction among their different component elements and sectors. In addition, they are part of an urban and regional environment, by which they are influenced and which they, in turn, also influence. Examples of the influences of the terminals on the urban environment are the extent of traffic congestion they cause, land use changes in their surroundings, and degradation and/or re-urbanization of areas, among others (Gouveia, 1980). In addition, as illustrated in Figure 3, they receive inputs from the surrounding environment, such as people, vehicles, energy, operational inputs, information etc., handle such elements for the purpose of boarding/loading and disembarkation/unloading activities and return outputs to the medium, such as vehicles, people, sewage, garbage, gaseous pollutants, etc. Terminal administrators who have feedback available on performance, in terms of outputs to the environment, are in a position to make changes designed to ensure that the terminal reaches a state closer to the ideal.

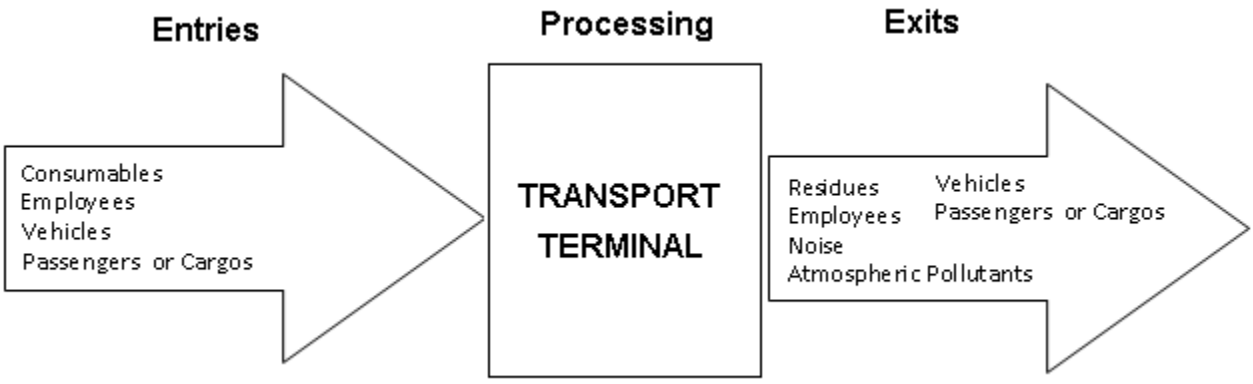

Figure 3 – Flow diagram of a transport terminal (adapted from Morlok, 1978)

Given that terminals have the characteristics of an open system, the process of determining their assessment parameters must be done in that light. According to the TGS, all open systems strive to achieve an objective /function involving their macro system and the environment that surrounds it. The extent to which that objective or function is achieved should be the overriding parameter for assessing the system's performance.

3.1.2. The semantic network of Transport Planning

The semantic network of transportation planning developed by Magalhães *et al.* (2007) and Ceftru (2006) is a representation that synthesizes the main elements to be considered in the planning of transport systems (Figure 4). The three base elements, referred to as macro-objectives, are efficiency, efficacy and mobility. They serve as the foundation for building a system of results-oriented assessment within an integrated transport planning process that seeks to transform transport from its actual state into the desired state. For that transformation to be successful, every effort must be directed at achieving the three macro-objectives mentioned above.

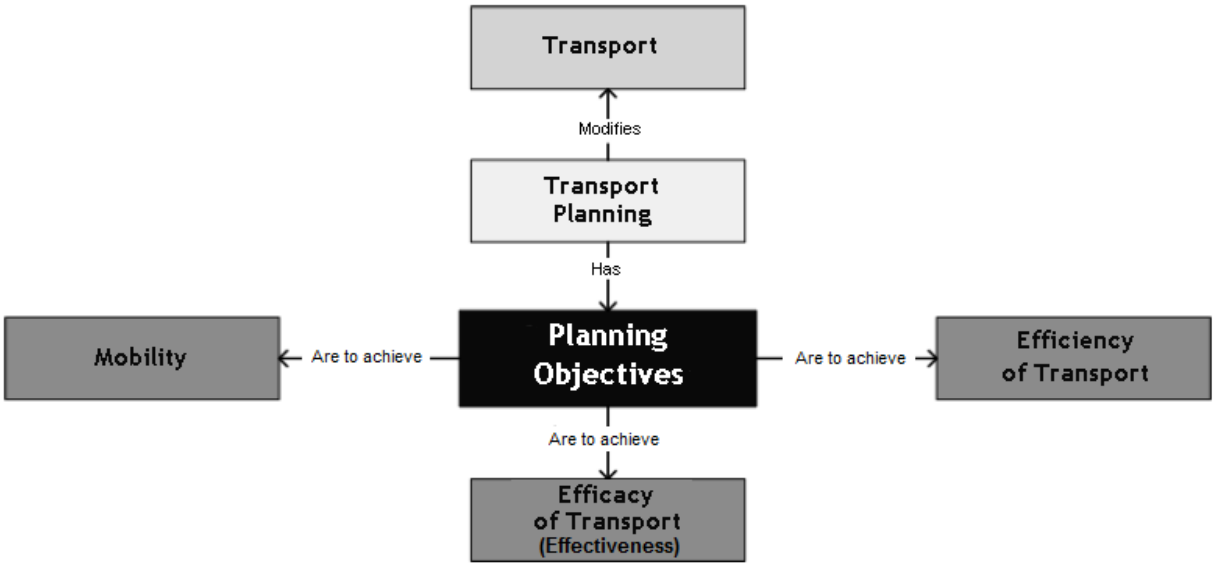

Figure 4 – Semantic network of macro-objectives in transport planning (Adapted from Magalhães *et al.,* 2007)

Mobility, is a property of the object that is to be transported, and is determined by the accessibility of the means of transport to both the subject and object (Magalhães, 2007 and Ceftru, 2006). The means consists of those elements that make the movement of the object from one place to another possible, such as the vehicles, roads and terminals. The object is whatever is being transported and may be cargo, animals or people. While the accessibility of the means to the object of transportation is determined by the spatial availability of the means[1], the compatibility of the means with the object to be transported[2], and the physical capacity of the means to accommodate the object[3], the accessibility of the means of transport to the subject is determined by the latter's financial capacity[4] and the availability of the means in the proposed timeframe[5] (Brazil, 2007).

For the transport system to achieve its objectives, it is not enough simply to ensure that the subject and the object will be able to access the means of transport. The object needs to reach its destination (assertiveness) on time (timing) and undamaged (integrity of the object); those are the aspects that characterize transport effectiveness (Magalhães *et al*., 2007; Ceftru, 2006; Brazil, 2007).

In addition to mobility and effectiveness, we must ensure that transport is efficient in serving its purpose. Efficient transport is one produced with the minimum of input and a minimum of negative externalities. For both, we can analyze the efficiency of transport from the perspective of production and the viewpoint of the market (Magalhães *et al*., 2007 and Ceftru, 2006). The market efficiency is determined by the competitiveness of the prices charged for services and the cost of using the infrastructure, the available transport service options, the balance between supply and demand and by the degree of competition in the market, which, in turn, is determined both by the diversity of service providers and the degree of market concentration. That is, production efficiency is determined by the cost of services, the cost of infrastructure and the externalities generated to the environment (Ceftru, 2006; Brazil, 2007).

Given the above, the semantic network was used because it provides scientific support to the process for determining appropriate parameters for intercity bus terminal assessments. It sets out clearly the main elements that must be considered when planning a transport system that approaches the ideal. These elements, applied to the terminal (which is a subsystem of the of interurban road passenger transport system, as previously explained), are also the macro-elements to be considered in the evaluation of intercity passenger bus terminals.

3.1.3. The Theory of Human Needs and the Two-factor Theory

The theory of human needs, developed by psychologist Abraham H. Maslow, postulates that human behavior is motivated by five groups of needs, ranked according to their respective degrees of priority in a pyramid (Chiavenato, 2004), shown in Figure 5.

[1] The existence of bus services connecting two cities, for example.
[2] Transportation of animals must be done by appropriately adapted vehicles, for example.
[3] The structural nature of a transport system must be compatible with the nature of the demand for it
[4] For users to effectively make use of the collective transport system they must be able to afford the fares being charged.
[5] As an example, for a system user that depends on urban transit services to travel at night, there must be such services available at night

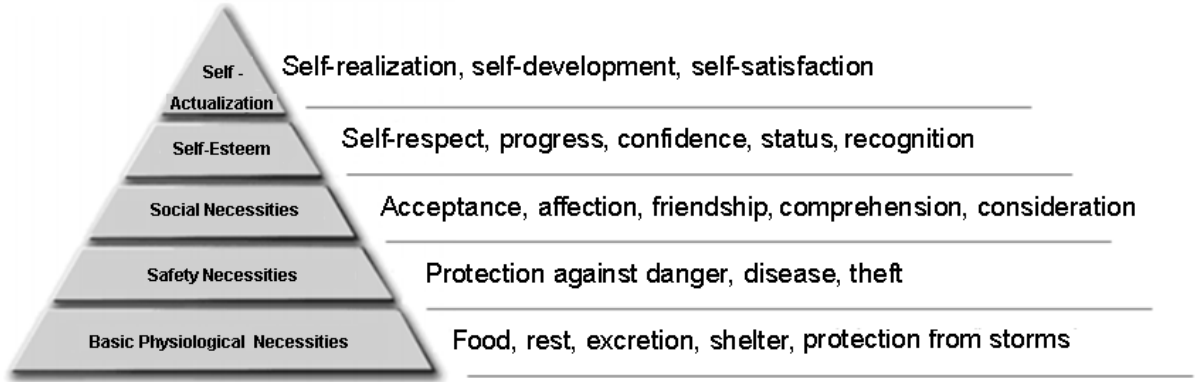

Figure 5 - The hierarchy of human needs (Adapted from Alves, 2007)

At the base of the pyramid are the most basic needs, physiological demands, such as the need for food and rest. Once these basic needs are met, then comes the need for individual safety and so on up to the need for self-realization at the top of the pyramid (Chiavenato, 2004; Quirino, 2008 and McGregor, 1992), as shown in Figure 5.

The two-factor theory, closely related to the theory of human needs, considers that the individual is motivated by two groups of factors: hygienic factors and motivational factors. The first correspond to the basic human needs that must be met under pain of generating dissatisfaction in the individual. In the pyramid of the hierarchy of needs, these relate to the physiological needs, together with the need for security and some social needs. However, when met, they do not determine human satisfaction; they simply avoid dissatisfaction. Satisfaction is caused by motivational factors, related to the secondary needs identified by Maslow (needs for self-esteem and self-realization) (Chiavenato, 2004).

Thus, these two theories were used as a guide for the identification of the basic needs of the individual that must be met in STRIP terminals and that must be prioritized in the evaluations. In that way the basis for determining terminal evaluation parameters was established. Given that the focus of the assessment is on the quality of services provided to terminal users, the minimum standard of quality demanded of a terminal is that it should adequately meet the basic needs of its users.

3.2. Determination of the Parameters

The evaluation of the quality of the various facets of customer service provided to STRIP terminal users and the measurement and assignment of values to each aspect (comparing their respective current situations with the pre-established parameters) will make it feasible to judge the quality of customer service encountered. There were three activities involved in determining evaluation parameters: identifying the terminal's function within the STRIP as the overall reference for the evaluation; followed by a systemic characterization of the terminal, with the specification of all its subsystems, components and relations between them; and finally, the determination of the parameters for evaluation, with the definition of the ideal state of each aspect to be assessed, as presented in Figure 6.

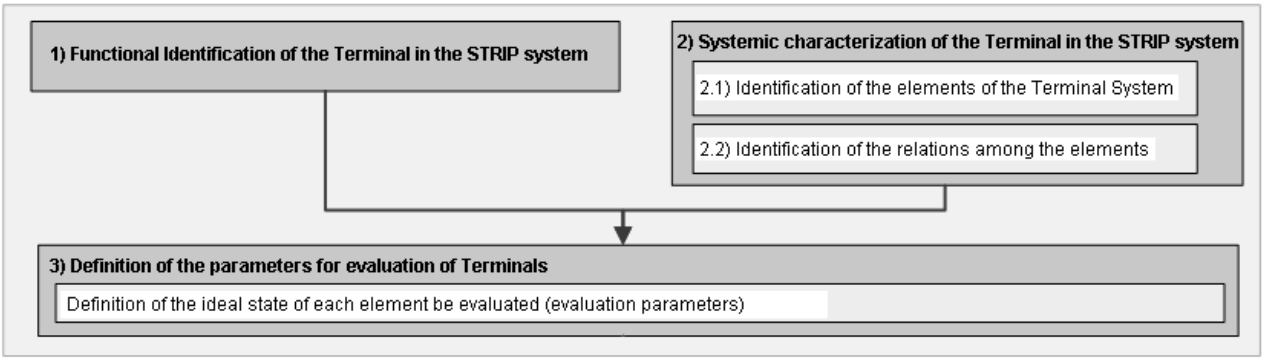

Figure 6 - Methodology structure for defining
evaluation parameters for interurban passenger bus terminals

1) The functional identification of a STRIP Terminal

As stated in the item on General Systems Theory (3.1.1.) the process of defining assessment parameters should address the terminal as being an open system and the overriding parameter for terminal assessment must be the extent to which it fulfills its functional role in the macro-system it is part of. Accordingly the first step towards the definition of parameters must be to identify the terminal's function in the STRIP.

The technical literature indicates that the basic function of a bus terminal is to enable the transferal of the object transported between means of transport belonging to the same system or between different transport systems (Morlok, 1978; Gouvea, 1980; Soares, 2006; Ceftru, 2006; Panitz, 2007 and Dunham, 2008). In addition, the intercity journeys of individuals begin at a point of origin within the city, usually their residence, place of work, etc. As the transportation planning must provide mobility, efficiency and effectiveness throughout the entire journey, according to the presuppositions of the semantic network of transportation planning, and as the transferal from one means to another is a natural part of any transit or trip, then it must be understood that for the transfers from intra-urban transport to intercity transport and vice versa, or just intercity to intercity transport, the bus station should provide mobility to the individual, as well as being effective and efficient. In short, the primary function of an interurban bus terminal is to allow the transfer of the object transported from one means to another of the same system or from one transport system to another with efficiency, effectiveness and mobility. In this study, the objects of transport are the passengers.

2) Systemic characterization of the terminal

As mentioned, in the light of the study of the General Systems Theory, the terminal is a system inserted in an urban environment where it interacts with other systems, such as urban and suburban transit systems, the systems of road networks, and systems of activities that enable it order to perform its functions. The terminal has a series of interdependent elements in constant interaction that can be functionally distributed among four major subsystems: the operational, the public use (involving the public services sector), the administrative and the activities/related services (which include commercial activities). Each of those subsystems, with its components and their relations, is set out in greater detail in the following figures. It is important to emphasize that, although they are presented here separately for explanatory purposes, in the terminal systems themselves they may be physically conjugated or overlap one another.

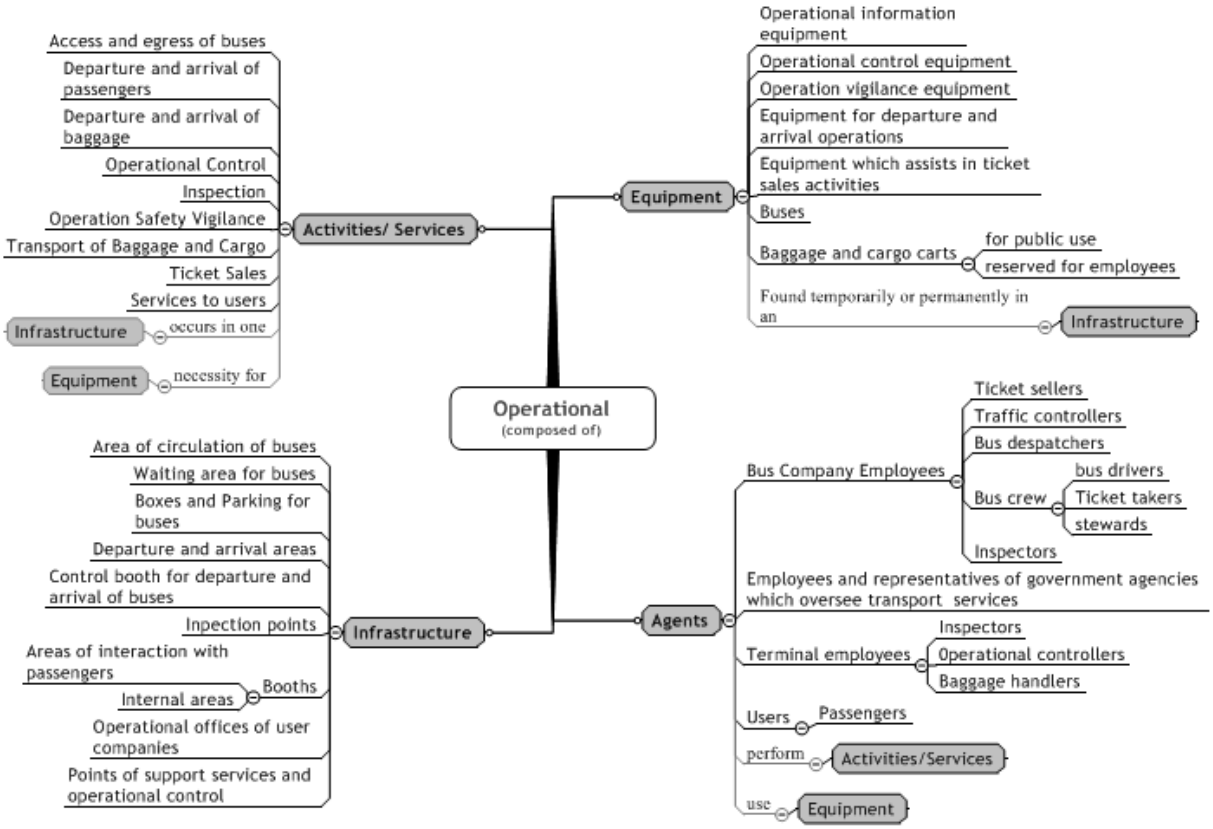

Figure 7 – Operational subsystem

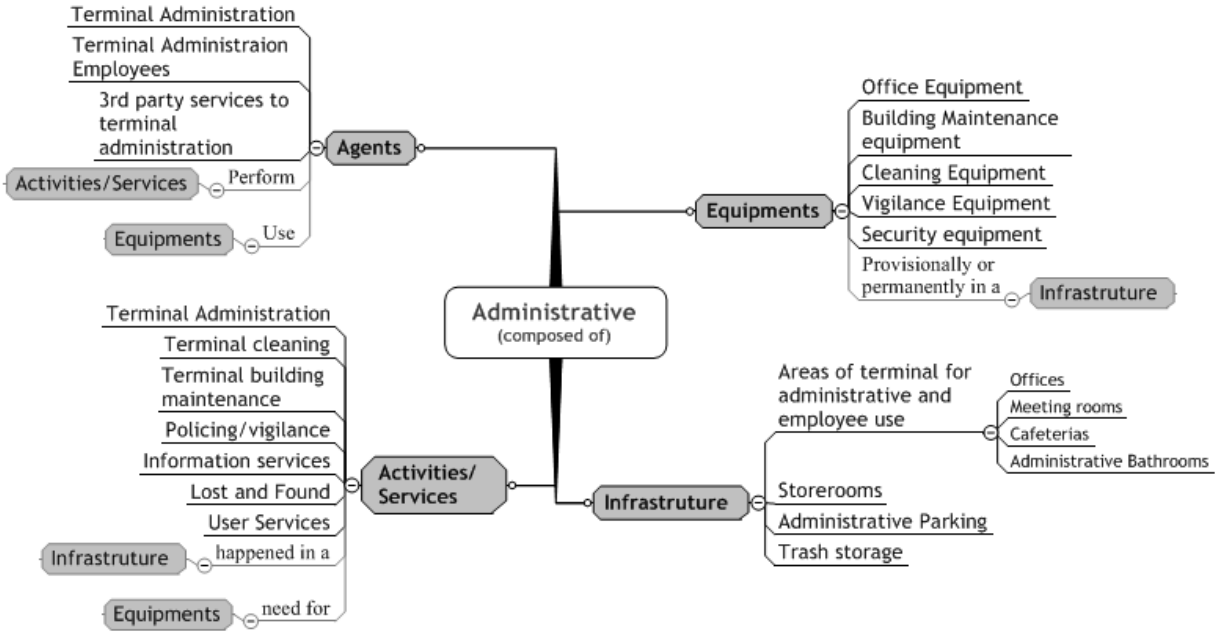

Figure 8 – Administrative subsystem

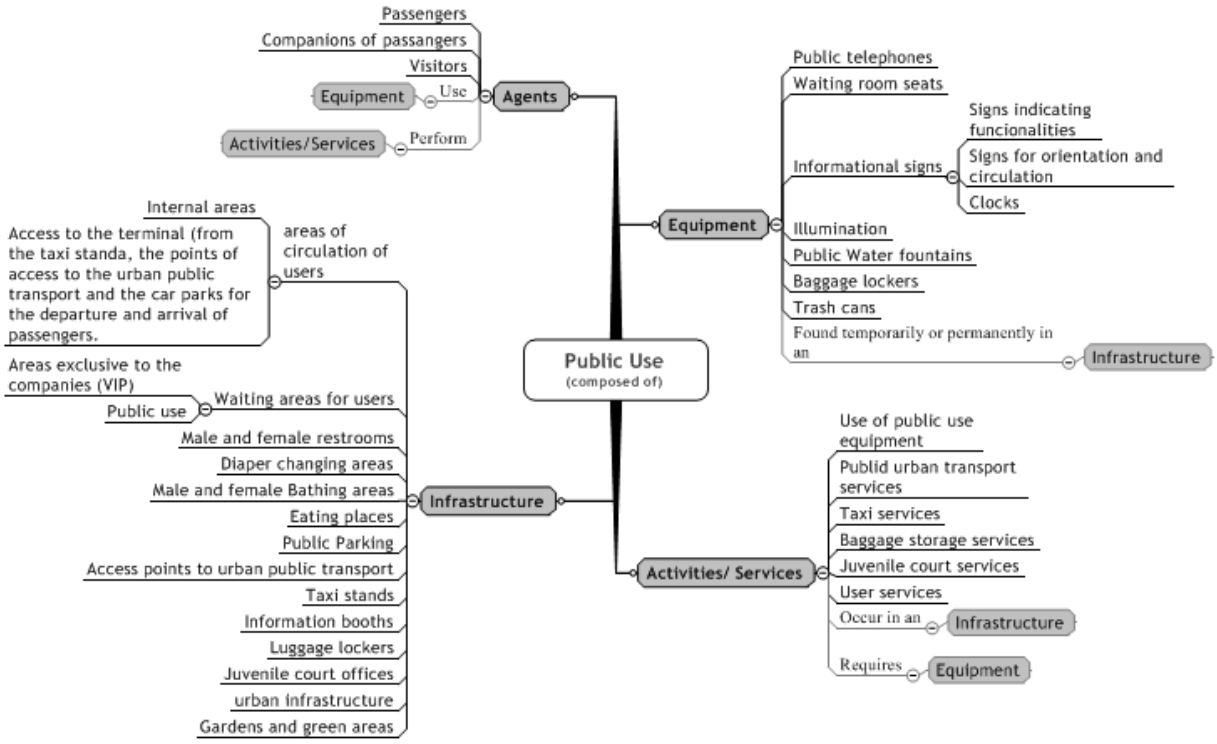

Figure 9 – Public use subsystem

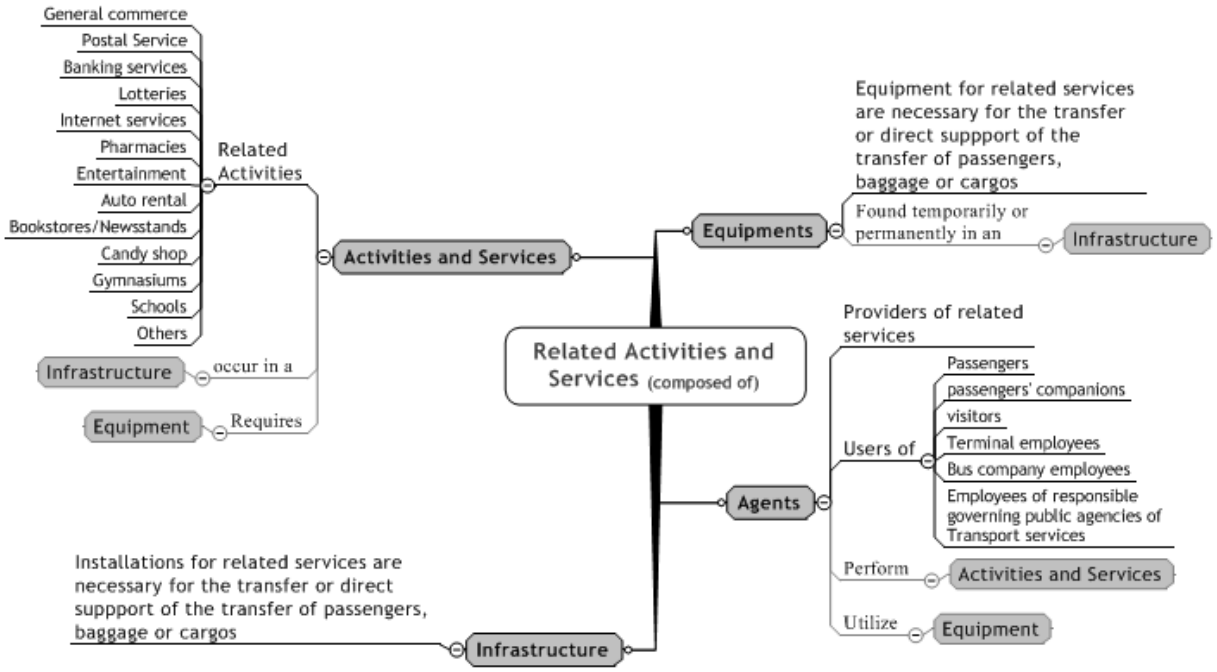

Figure 10 – Related activities/services subsystem

One of the presuppositions here is that adopting this systematization for the parameter-defining process will not only facilitate the assessment process as such, but also facilitate later correction of the problems identified.

3) Definition of the evaluation parameters

As indicated by the study of the General Systems Theory and the Semantic Network of Transport Planning, the function of the terminal within the TRIP system is to make possible the transferal of the transported object among the means of a single transport system or of different systems with efficiency, effectiveness and mobility, those aspects should constitute the macro-parameters for an effective evaluation of STRIP terminals. More detailed specification of them based on the terminal subsystems will define the actual parameters to be used in evaluation more precisely as shown in Table II below. In the first column on the left are the three evaluation macro-parameters, namely effectiveness, mobility and efficiency. In the columns to the right the parameters are specified in increasing detail according to the presuppositions of the semantic network of transport planning and the systemic structure of intercity road passenger transport terminals referred to in the preceding items. Table I presents structural guidance to facilitate the interpretation of Table II which follows it.

Table I – Structural guidance for the interpretation of table II

STRIP TERMINAL ASSESSMENT PARAMETERS				
Efficacy	Parameter A, necessary to ensure efficiency of customer service as set out in the transport planning semantic network	Parameter A.1, necessary to meet the requirements of Parameter A	Parameter A.1.1, necessary to meet the requirements of Parameter A.1	Parameter A.1.1.1, necessary to meet the requirements of Parameter A.1.1
		Parameter A.2, necessary to meet the requirements of Parameter A	Parameter A.2.2, necessary to meet the requirements of Parameter A.2	Parameter A.2.2.2, necessary to meet the requirements of Parameter A.2.2
	Parameter B, necessary to ensure efficacy of customer service as set out in the transport planning semantic network	Parameter B.1, necessary to meet the requirements of Parameter A	Parameter B.1.1, necessary to meet the requirements of Parameter B.1	Parameter B.1.1.1, necessary to meet the requirements of Parameter B.1.1
		Parameter B.2, necessary to meet the requirements of Parameter A	Parameter B.2.2, necessary to meet the requirements of Parameter B.2	Parameter B.2.2.2, necessary to meet the requirements of Parameter B.2.2
…	…	…	…	…

Progressively more detailed parameters (conditions) to ensure that Efficacy, Efficiency and Mobility are associated to all transfers conducted in the terminal

Table II – Evaluation parameters for passenger terminals in the Intercity Road Transport System

STRIP TERMINAL EVALUATION PARAMETERS					
Efficacy	Time consumed in transfer		Means of transport arrives and departs at the scheduled time	Although it is a necessary element for the adequate functioning of the terminal system, this parameter can be ignored in the assessment because it depends exclusively on the operating companies and factors related to their operations and not on the terminal as such	
			Users arrive at the time agreed upon	Same as above.	
			Users able to reach the terminal and access the means of transport easily	Terminal served by public urban transit services (if the locality has such services)	
				There is a taxi service at the terminal.	
				User satisfaction with the time of displacement from his or her origin to the terminal or from the terminal to his or her destination	
				Satisfaction of interurban bus driver with time it takes to maneuver from the highway or other point of access to the terminal	

STRIP TERMINAL EVALUATION PARAMETERS					
			Existence of information to help users transfer quickly	Existence of clocks in proper working order in arrivals, departures, and waiting areas or in their vicinity	
				Existence of operational information devices installed in the terminal (such as placards, signs and the like) indicating the location of boarding areas of buses, platforms and ticket windows (if the terminal is served by international lines, information also in English or Spanish)	
				Existence of general devices and signs to guide the movement of users to the existing features in the terminal (bathrooms, telephones, etc - if the terminal is served by international lines, information also in English or Spanish)	
				Existence of information services through personal attention (if the terminal is served by international line, existence of such a service in English or Spanish)	
				Existence of information services for the user with information about the times of arrival and departure from the bus terminal of the respective bus companies by means of panels or similar devices	
				Existence of a tourism information service for the local area, with information on hotels, location of important points of the city, ways to reach these points, etc (if the terminal is served by international line, existence of such a service in English or Spanish)	
				User satisfaction as to the availability and clarity of information existing in the terminal and its usefulness	
			Users able enter and exit the terminal and its transfer area quickly	This item will be considered under accessibility of the means of transport , since some of the parameters more specifically related to it will be pre-conditions for the user to gain entry/exit the transfer area quickly, such as the accessibility and the capacity of the areas destined for user circulation	
	Integrity of the object		Safe transfers	Nocturnal illumination in the arrivals, departures, waiting and user circulation areas, at the service counters, in rest rooms and diapering facilities, bathrooms and places to eat	1
				Existence of a valid certificate from the Fire department attesting the conformity of the site with the required security standards	
				Existence of security surveillance in the terminal for the whole period of operation (police service, surveillance by private personnel and/or electronic vigilance)	
				Existence of a mechanism to control the access of people who will not travel to the points of departure or arrival.	

STRIP TERMINAL EVALUATION PARAMETERS					
				No exposed wiring in the terminal (unprotected electrical wiring and sockets, etc)	
			Comfortable Transfers	Appropriate state of conservation of areas of departure and arrival, waiting area, areas of circulation of users, the service counters, rest rooms, diapering areas, bathing areas and places to eat (no cracks, broken pieces, parts unfinished, leaks, drips, mold, rust and/or peeling on the walls, partitions, pillars, ceiling and floor; absence of equipment out of service, with parts broken, cracked and/or rusted; absence of graffiti on the walls, floor, ceiling and equipment)	
				Resistant flooring in all departure, arrival, waiting and circulation areas and around booths	
				Roofs or ceilings for all departure, arrival, waiting and circulation areas and around booths	2
				All departure, arrival, waiting and circulation areas well ventilated	
				Waiting rooms have chairs	3
				Availability of luggage loading service or trolleys for that purpose	
				Public drinking fountains available	4
				Availability of an adequate number of working public telephones in the various areas.	5
				Availability of male and female restrooms in the terminal, and at least one of each gender free of charge	6
				Existence of visitors' welfare or restrooms male and female with benches and a booth appropriate for baby hygiene	
				Availability of male and female bathing areas.	
				Mirrors installed in the bathrooms	
				Availability of ventilated areas for eating	7
				Existence of public parking available throughout terminal opening hours. The area should be paved, and free of maintenance defects such as cracks, potholes and undulations	
				Terminal must have potable water	
				Availability of a juvenile court judge or information as to the closest location where one can be found	
				Availability of a lost and found service	
				Availability of luggage lockers or a luggage storage service in the terminal	
			Healthy Transfers	Areas of departure and arrival, waiting areas, areas of passenger circulation, ticket offices, restrooms, diaper changing areas, bathing facilities and places to eat with walls, pillars, partitions, floors, roofs and/or equipment	8

STRIP TERMINAL EVALUATION PARAMETERS					
				free from any accumulation of dirt, dirty marks or trash	
				Absence of disease carrying vectors or urban pests visible in the areas of departure and arrival, waiting areas, areas of circulation of passengers, ticket offices, restrooms, diaper changing facilities, bathing facilities and places to eat	
				Availability of rubbish bins in the main areas of concentration of people and in the bathrooms, diapering facilities and places for bathing	
				Availability of disposable paper towels, warm air hand dryer, or other device for hygienic hand drying in washrooms and diapering facilities	
				Availability of liquid soap in the lavatories and diapering facilities	
				Availability of toilet paper next to each toilet	
				Bathrooms with seats and lids on all toilets	
				Bathrooms and diapering facilities well ventilated	
				Diapering areas have appropriate paper products for covering the table or counter designated for the changing of diapers	
				Diapering facilities have moist wipes for the cleaning of babies bottoms	
				Diapering areas have toilet paper	
				Noise level in waiting areas conform to the limits prescribed in the ABNT regulations NBR 10151 and NBR 10152	
			Courteous attention to users	User satisfaction with the courtesy of workers in the terminal	
	Assertiveness		Completion of the transfer	Although it is of overriding importance in ensuring that the terminal fulfills its STRIP function, this aspect is a *sine qua non* for any evaluation to be made in the first place and so it is not included as evaluation item	
Mobility	Accessibility of the terminal space rto passengers	Availability to the passenger	Availability of the terminal	Although they are of overriding importance in ensuring that the terminal fulfills its STRIP function, their existence is a *sine qua non* for any evaluation to be made in the first place and so they are not included as evaluation items	
			Terminal has transport services		
		Compatibility with the passenger*	Terminal is accessible to users	Terminal conforms to the requirements of NBR 9050:2004 e NBR 15320:2005 E 15599:2008	

STRIP TERMINAL EVALUATION PARAMETERS					
			Terminal is accessible to the largest buses of the Strip	Possibility of access to and movement in the terminal of buses with the largest dimensions authorized by Contran (4.40 meters x 14 meters x 2.60 meters wide)	
				Areas of circulation and bus parking paved and free from maintenance defects, such as cracks, potholes and undulations in the pavement	
		Physical capacity of the facility	Terminal has adequate capacity for the period of greatest movement of passengers and bus	Appropriate standard of service in areas of circulation, waiting for arriving passengers and restrooms during the terminal's peak period	
				Number of phones suitable to the demand for their use	
				Number of bays for parking of buses appropriate to the number of buses that can access the terminal during its peak period	
				Existence of waiting area for buses prior to boarding/ disembarkation procedures when the bays are fully occupied	
				Number of vacancies in the parking lot for cars suitable to demand	
				Ease of movement and/or parking maneuvers for buses when there are others parked in the bays	
	Accessibility to transport subjects	Financial capacity of the subject	Use of the terminal is affordable to users	The focus of the assessment is on the quality of service provided to those that are effectively using it (and therefore have demonstrated financial capacity) it so this item can be left out of the assessment	
		Temporal availability of means	Existence of the terminal	The act of assessing a terminal presupposes that one exists therefore this parameter can be ignored	
			Transport services that gain access to the terminal are continuous and recurrent	Although it is essential to enable the terminal to fulfill its function in Strip, this aspect depends on the operational programming undertaken by the operating companies alone and not the terminal itself. Thus, the act of evaluating it can be dispensed with	
Efficiency	Production Efficiency	Cost of services	Since the focus of the evaluation is on the terminal itself (infrastructure), evaluating the services should not be part of the assessment because they are the exclusive responsibility of the companies that operate in the terminal. Although they have not been considered in this study, they can be evaluated by the extent of user satisfaction with the rates charged for terminal use (rates of shipment) and with the price of foodstuffs and other services provided in the terminal		
		Infra-structure costs	Optimized terminal construction, operation and	Due to their low reliability and difficulty in the acquisition of data on the financial aspects from terminal administrators, this parameter was not included in the assessment	

STRIP TERMINAL EVALUATION PARAMETERS					
			maintenance costs		
		Negative environmental factors	Minimal negative environmental impact is caused by the terminal and environmentally sustainable practices are in place	Use of natural light for daytime lighting of areas for boarding/disembarkation, movement, waiting for users and the local power supply for the terminal	
				Use of natural ventilation for the ventilation of the areas for boarding/disembarkation, waiting, circulation and places to eat	
				Selective garbage collection in force	
				Existence of unpaved areas and vegetation within the terminal's perimeter	
				Use of solar energy	
				Re-use of water	
				Terminal connected to a network or other means of sewage collection	
	Efficiency of the Market	This item relates primarily to the transport services that use the terminal, which are not the focus of the assessment and so this aspect will be disregarded			

The table is self-explanatory so there is no need to discuss its contents. However to further exemplify the first part, it is considered that a terminal is effective when the transfers occur in a timely manner, the user's integrity is not threatened or jeopardized and there is assertiveness of the service offer, in other words, the transfers can effectively take place. An ideal terminal would be one in which suitable safety, comfort and health and hygiene standards are maintained and terminal users are treated courteously by all terminal staff. The ideal terminal is one that meets all the conditions presented in Table II. Although the list of items may seem to be long the assessment work is actually simple, fast and practical and merely requires that the evaluator should have good knowledge of terminal installations as specified in detail in the study conducted by Nascimento (2010).

Parameters 1 to 8 are related to the satisfaction of the individual's basic as contemplated by the Human Needs and Two-factor theories. The specified parameters 1, 2, 3, 4, 5, 6, 7 and 8 are related, respectively, to the satisfaction of the need for security against urban violence and accidents, satisfaction of the physiological need for protection against inclement weather, satisfaction of the physiological needs for rest, hydration, social communication and excretion, and lastly, the satisfaction of the need to be safe from exposure to any risk of infection. As these parameters are related to factors classified in the Hygiene category of the two-factor theory, they should be prioritized in the evaluation of the terminal, because when not met, they

lead to user dissatisfaction and consequent failure of the terminal to perform its STRIP function satisfactorily.

4. FINAL CONSIDERATIONS

The integrated planning process of a transport system seeks to achieve a transformation of the system from its current status to another idealized by the planner. To be successful, it must be anchored in effective knowledge of the current state of the system, so that critical points can be identified and form the basis for designing corrective actions that will transform the current scenario into the idealized one.

This paper has endeavored to fill a gap by offering the transport system planner a series of parameters to be considered in the evaluation of the quality standards of Interurban Road Passenger Transport System terminals; essential elements for ensuring the proper working of the system and responsible for a very large percentage of Brazilian people's intercity movements. Although there may appear to be many items, such parameters can be quickly and easily observed by the evaluator. Basically they have two important features: by directing attention to details of the terminal's systemic structure, they enable the evaluator, quickly and accurately, to identify aspects that need to be improved for the terminal to fully perform its functions as part of the STRIP, thereby functioning as a source of feedback, and secondly, they allow the planner to obtain an overall view of the quality of service the terminal is providing to its users and to establish quality assessment rankings embracing the System's terminals as a whole. For this latter functionality of the parameters to be feasible, an assessment methodology must be found that make it possible to classify all terminals according to their quality standards. It should take into consideration the identification of the data to be collected, the determination of instruments for data gathering, processing and tabulating and for measuring terminals' quality standards by attributing points that reflect their real quality levels as compared to the envisioned ideal level. It would also be interesting for the methodology to aggregate parameters under various different heading (comfort, hygiene, information, etc) and that the assessments should consider the relative levels of importance that such categories may have for different interest groups, such as users and planners, to prioritize the most important elements in each case. A proposal embodying such assumptions and its validation in the form of a case study has been put forward by Nascimento (2010).

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