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## Transportation and urban mobility in mega-events: The case of Recife

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### Abstract

Mega-events have taken pride place in the urban agenda of contemporary metropolises. This current importance lies in the fact that the mega event be viewed as a catalyst for urban development of a metropolis, and an opportunity for affirmation them as global cities.

The realization of a mega-event can be the showcase of a country on the international stage, and urban transport can be the determinant for the success or failure of the mega event. The transport infrastructures imply high investments for both installation as well as maintenance after the event. Therefore, without a global planning (before, during and post- event), urban transport can become a detriment rather than benefit to the host city and the resident population.

In view of the 2014 World Cup to be held in Brazil and the country's problems around the theme of public transport , this research analyzes , based on the guidelines advocated by Eva Kassens in his thesis " Transportation Planning for Mega Events : a model of urban change , Massachusetts Institute of Technology (2009 ) " , will study similar proportions in other countries and identifies the strategies adopted for the planning phase ( pre - event ) , production ( during the event ) and legacy ( post-event ) aiming to define what positive and/or negative results that the "strategy of the mega event " will bring to the transport and mobility in Brazil , specifically for the City of Recife.

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### 1. Introduce

Mega-events have acquired new meanings and dynamic and has a important place on the agenda of contemporary urban metropolises that have a new economic role on the global economy (Smith, 2013).

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The new urban question arises related to the concept and techniques of business planning. The concept, which was developed at Harvard University, is developed from the understanding that cities are subject to the same business challenges. The globalization of economy and communications produce competition among territories (Vainer, 2002).

This new economy even though dispersed needs centralities with infrastructure for economic and political management (Sassen 1998 cited in Smith 2013), and this need has generated competition among cities in the world to achieve the rank of "global cities". The cities that are not included in this select group develop strategies to consider as a territory of global business, one of them is the strategy of the mega event, which has the greatest example of successful Olympic Games in Barcelona 1992. The "Barcelona model" is constantly cited as the best example of use of a mega event as leverage for urban transformation and urban marketing to promote the city's image to the point of being considered a global city making it mandatory route of thousands of tourists every year.

The realization of a major event can contribute to attract investment and boost the development of an urban metropolis. Nevertheless, there are many criticisms about the actual benefits left the post-mega event for the community. The high government investment in infrastructure, high maintenance cost and low utilization generate post-event loss to the state and indignation of the resident population. Another factor that may be conflicting is the relationship between two main actors responsible for carrying out a mega event who have different needs, the owners of the international event ( FIFA , IOC and others) and local government. They will determine the process of urban transformation necessary both for the event, as well for the benefit of citizens. Often this relationship can lead to conflict, to the extent that the owner of the event is only concerned with measures that meet their immediate need for a short - term, local authorities must also meet the expectations of those who need these benefits permanently ( Essex and Chalkley , 1998; Kassen , 2009) . The issue of transport and urban mobility and necessary investments for this sector are always in the middle of the conflicts between the target event needs and expectations of the people.

The World Cup 2014 to be held in Brazil on 12 host cities, including the city of Recife, capital of Pernambuco, located in the Northeast region of the country. Recife is the capital that grew more economically in the last 12 years in Brazil. However, economic growth was not accompanied by improvements in urban infrastructure. Currently, urban mobility and urban transport is a major problem faced by the population of the metropolitan area of Recife.

Within this context, taking as reference the work of Eva Kassen, this work pretends to evaluate the plans and projects that are being developed in Brazil, specifically in the city of Recife, and understand if these proposals will be enough for the short, medium or long-term, in other words, to realize the transport planning to Recife city be able to attend the event and leave a real legacy for the resident population.

### **Nomenclature**

IOC	International Olympic Committee
FIFA	Federation Internationale de Football Association (International Federation of Association Football)
IBGE	Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics)
RMR	Recife Metropolitan Region
GDP	Gross national product

## **2. Theoretical framework**

Some scholars believe that the mega event only serves to exacerbate social problems and differences between residents of the host city ( Rutherser , 2000) , and they see the event as a strategy for urban renewal revolves around the discussion about who will benefit and that rare occasions result in some improvement for citizens ( Andrinovich et al , 2001apud Kassens , 2009) .

Other authors believe that the mega event allows the creation of an urban system capable of accelerating growth in the urban agenda , and define it as a catalyst for urban transformation . ( Essex and Chalkley , 1998; Chen and Spaans , 2009) . Catalyst according to the chemical is a substance that under certain conditions accelerates a natural process , in other words, it only accelerates a process that is already underway , Kassen in their study , transportation

planning for Mega Events : a model of urban change 2009 , argues that the mega event more than speed , is able to change the development process , depending on how the actors involved in the process may influence urban policy.

Kassen also argues that in the process of urban transformation, transport, although little studied, are of vital importance for the mega event as are the legacy of greatest potential benefit for the population, because they interfere directly in how people move.

The analysis of Kassen's thesis, part of previous experiences of other host cities of mega events to identify the strategies adopted to the management of transport and urban mobility in the planning stages (pre-event), production (during the event) and legacy (post-event), with that the author makes a comparative analysis of the strategies used and defines what actions can be responsible for the success of the mega event both in its realization as the legacy for the people. With reference to the study of Kassen, the research is being constructed from theoretical survey; study of previous cases raising strategies for urban mobility in Recife: Plans, projects and activities realized and/or in progress, interviews with representatives of agencies and institutions responsible for coordination, planning and execution of the event, comparative analysis and identifying tendencies.

### *2.1. Transport planning for the mega event*

Host a mega event is something that can jumpstart the process of urban change, but involves many responsibilities and some effects may be contrary those desired where investments are not applied properly. When infrastructures are underutilized generate prejudice to the State at the expense of little benefit to the population.

The Transport have an important role in this context, according to Marques et al (2012), the structure for the reception of persons in the various types of transport, air, land, maritime and urban, are key to the success of the event and for a good image of the hosts countries. For that is needed a proper planning of the transport system, because this is an inhibitor or an inducer of displacements.

However, *"the transportation planning permeates the interests of actors who can influence decision making, such actors have two basic characteristics: The view over the city and the power to implement it"* (Kassen, 2009). Two actors<sup>†</sup> have the above characteristics, the owners of the event and the leaders of state. Sometimes have divergent interests, the first usually with focus on the success of the event and the second with the responsibility legacy for the city. To diminish divergences, develop strategic planning involving the various interests becomes fundamental.

To Kölbl; Niegler; Knoflocher; (2008) apud Marques et al (2012), the transportation planning is complex and involves technical, socio-economic and environmental aspects, which can often become inconsistent and subject to various interpretations that can keep political plans away of the real needs of the Transport. The solution, according to the authors, is the development of a Strategic Plan following a qualitative method, with monitoring and tracking for years.

Kassen(2009), defines 5 factors that influences the transports planning of mega events: The space and the territory for the planning; Government Policy, Economic power, technology and social and behavioural trends. These factors should be included in all stages of strategic planning for positive result of the mega event. The stages of the transportation planning of a mega events, according to Carvalho; Hill; Taco (2008) cited in Marques et al (2012) are:

*"Pre-event: one should make the classification of the type of event that will be held, characterization, study area, identification of stakeholders and their responsibilities, as well as the study of demand.*

*Event: Operations required in relation to the transport system, which specifically involves the transport service, the training system, traffic control signage and access.*

*Post-event: should finally make an assessment of the level of communication between the actors involved and the impacts produced by the mega-event. "*

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<sup>†</sup> Definição de actores, no texto foi citada apenas aqueles que tem o poder de influenciar directamente as decisões.

Regarding the stage of the event, other factors are important as we expect better functionality of transport services to facilitate the achievement of sport. Kassen (2009) warns that it takes attention to specific groups of users of transport, separated into, spectators, actors, technical, volunteer staff and media. The expectation is that the displacement of these groups happen with efficiency, effectiveness and safety, while respecting the specific needs of each group and considering the recommendations of the owners of the event.

- The International Olympic Committee - IOC, for example, determines some goals and recommendations for the transport planning for the event. The objectives of the IOC are (Kassen, 2009, p 57.):
  - Security;
  - Reliability;
  - Efficient, comfortable and inviting social gathering. Must ensure small trips in a short time, especially for athletes and the press;
  - Flexible, to reduce the risk of interruptions;
  - Consistent with the environment;
  - Contribute to the legacy of mobility for the host city and region.

The IOC also defines a hierarchy of priorities for transport during the Olympics:

Priority 01: Route of athletes made by specific bus

Priority 02: Media and press official and individual workers 24 hours a day, at specific bus

Priority 03: International Olympic Committee, International Federation, officials of the Olympic family, transportation made by cars and limousines

Priority 04: Sponsors first class, also by accredited individual vehicles

Priority 05: Staff and volunteer, public transport

Priority 06: General public, public transportation

With regard to accessibility, The IOC recommends that the places where the games will be played have two routes of access with safety and reliability, one ahead for spectators and sponsors without individual vehicle access and another access behind for priorities 1 to 4 referred to above, as well as for emergencies.

It is also recommended that a perimeter is determined in surrounding of the site of the games that separate the city's domain area of the mega event's domain area. In the case of the Olympic Games there is concern about the displacement between the locations of the games, as all games are played in the same city, so the IOC establishes a matrix that shows the ideal location each equipment that hosted the sports.

The dispersal of equipment by the city needs a high performance transport for providing efficient displacement, since a concentrated area can lead to problems of congestion and conflicts with pedestrians. Ideally, a compromise between these two forms of occupation, equipment can't be so close that can be considered a cluster, nor so distant that will be required long displacements.

However, the requirements of the IOC about time travel encourage the cluster format, in other words, a more focused organization. A solution that has shown good results is a system of control, command and communication modern and efficient, able to drive potential changes in traffic quickly.

Despite recommendations as the International Olympic Committee, the big problem in the face of planning is the prediction of additional capacity to meet peaks in demand which may result in underutilization of recommended capacity throughout the year and becomes uneconomical (Robbins et al, 2007, p. 304, apud Kassen 2009, p.36). Hence the importance of planning for long term linking transportation planning, urban planning and social behaviour in the city. Planning of Metro lines, buses and airport expansion. Thinking about the needs of the population and the development of the city, as well as structures that can be switched off after the games.

The expected post-event benefits are mostly the implementation or expansion of an integrated public transport, the transport of specific services for the games must be developed to support the needs of the metropolis and the community in the long term; Other thing that can be used in other events is adoption of management techniques incidents or traffic accidents. (Kassen, 2009)

2.2. Previous experiences

Eva Kassen (2009) pointed out, in her thesis, 4 host cities of the Olympics: Barcelona 1992, Atlanta 1996, Sydney 2000 and Athens 2004. All cities analysed have undergone a process of change in the public and private sitesma Transport, with benefits for both the completion of the mega event like the city in the post-event phase. These benefits were achieved through different degrees of management of Olympic Games as a catalyst and urban transport projects, associated in their strategic plans and a proposed city that meets expectations of people taking advantage of the opportunities brought by the games. (Kassen, 2009)

The success of the transportation system begins in the previous planning, from the choice of the Olympic areas, the provision of these areas will determine the travels during the event and the scenarios to the future development of cities. Each of the cities analysed ordered the Olympic activities in the territory differently (see figure 1). Barcelona opted for using and taking advantage 4 industrial or degraded areas in different parts of the city, connecting them with a high capacity ring road (RONDAS). Atlanta prioritized the revitalization of the urban centre putting the Olympic Village in the city centre and taking advantage of existing transport public infrastructure. Sidney bet on regeneration of Homebush bae, environmentally degraded region away from the centre’s activities using alternative routes and Athens risked development in a new centrality in the north in a triangular arrangement involving regular trips with Olympic’s travels.

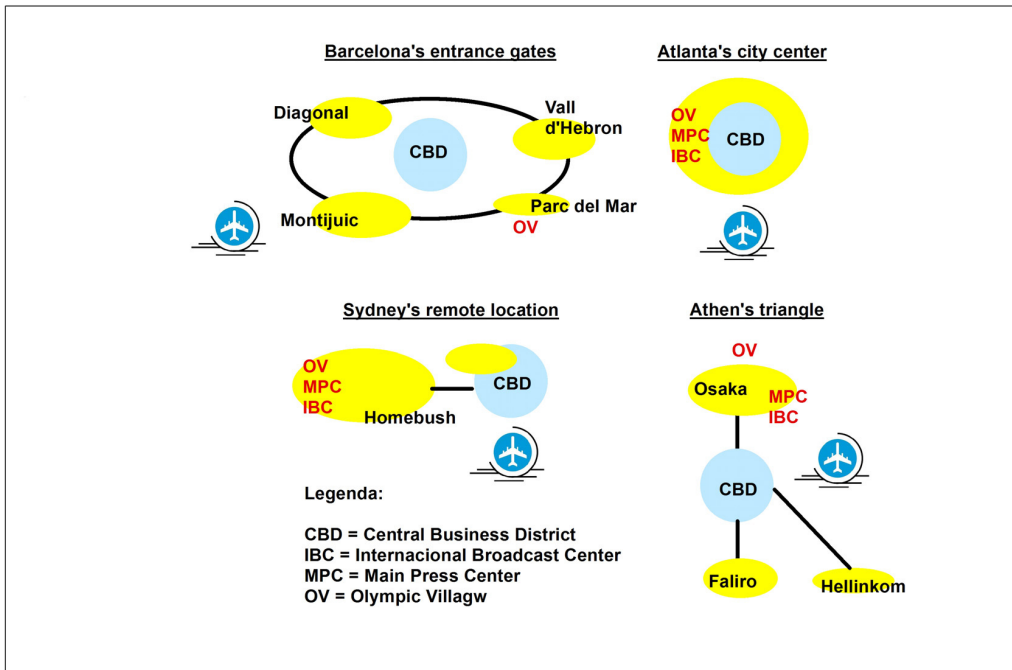


Fig. 1. Olympic cities' CBD and venue cluster locations. Source: Kassen, 2008, p.160

Cities also reached different results, Barcelona managed to engage in the design of games to become the "new Mediterranean city" Atlanta just received the games and became known as the Olympics of chaos, Sidney stood out for the city of "green games" and Athens improved the traffic situation.

Among the measures for the system of Transport and mobility, some actions stand out as positive, they are:

- Ease of access from the airport to the centre of cities
- Implementation of expressways and additional lines to the Olympic , Barcelona and Atlanta used as transport strategy a division of space between buses and private cars, with the problems that occurred in Atlanta , the cities of Sydney and Athens chosen exclusive lines for spectators and Free access to public transportation , the success of this measure has guided the recommendations of the IOC since.
- New measures for public Transport planned to event associated with a long- term vision, among which stand out the management of transportation demands that increase during the event but must have ability to reduction post-event, traffic restrictions, closures streets and parking lots near the train stations, metro and buses .
- Use of new technologies and managements centres with advanced information on new routes and lines , intelligent passenger transport , security cameras .
- Beautification and improvement of the fleet and urban centres
- Creating Olympic parks and Clusters spaces

The measures considered negative are related to lack of strategic focus and continuity of the measures taken during the event as traffic restrictions, the encourage of the use of public transport, support resources and workforce oriented to the system transport management.

Besides the implementation of measures such as those mentioned above, the analysis of the 4 cities warns that the positive result of the completion of the mega event is connected to the comply with of the following guidelines:

- 1) Comply with an urban vision, planning for a long term;
- 2) Face the mega event as a urban development catalyst and of urban transport projects and influencing mobility opportunities brought by the games;
- 3) Coordination of transportation planning and operation.

### 2.3. *The Recife City*

Recife is located in the Brazilian Northeast, in the state of Pernambuco and will be one of the host cities of the 2014 FIFA World Cup to be held in Brazil. The Metropolitan Region of Recife (RMR) is the largest urban agglomeration in the North-Northeast, the fifth largest in Brazil, with a population of 3.7 million inhabitants (IBGE Census 2010), and the third metropolis of the country in housing density, surpassed only by São Paulo and Rio de Janeiro, and fourth largest urban population in Brazil network. (see figure 2)



Fig. 2. (a) Brazil's Map with northeastern region highlighted in orange; (b) Map of Recife City

Recife is the metropolis with the highest GDP per capita in the Brazilian North-Northeast and is the political, financial, commercial, educational and cultural center of Pernambuco.

Concentrating 65% of GDP Pernambuco, its area of influence covers the states of Pernambuco, Alagoas, Sergipe, Paraíba, part of Rio Grande do Norte, the northeastern part of Bahia and the interior of Piauí and Maranhão.

Has a large international airport (Guararapes / Gilberto Freyre), two ports (Port of Suape and Recife Port), universities, museums, hospitals, industrial centers, commercial centers and resorts and hotels.

The metropolitan area spans 14 counties: Jaboatão Guararapes, Olinda, Paulista, Igarassu, Abreu e Lima, Camaragibe, Cabo de Santo Agostinho, São Lourenço da Mata, Araçoiaba Itamaracá, Ipojuca, Moreno, Itapissuma and Recife.

The city of Recife was elected by research commissioned by MasterCardWorldwide as one of 65 cities with more developed economies of the emerging markets in the world. Only five Brazilian cities made the list, having received Recife fourth, after São Paulo, Rio de Janeiro and Brasília and in front of Curitiba.

According to British consultancy PricewaterhouseCoopers, Recife will be one of the 100 richest cities in the world in 2020.

Despite being the fastest growing economy in the country in the last 12 years, Recife is not inserted on the world stage and managers of the municipality see, in world cup 2014, the possibility of a positive marketing to attract more investment, more tourists and the title of competitive city, a global city.

However, like other Brazilian cities, economic growth is not directly reflected in urban infrastructure. Recife is a city that suffers from uncontrolled growth, social inequality and a chaotic urban mobility due to the high number of private cars<sup>‡</sup>, a result of increased purchasing power of the population and a public transport that did not follow the growth of the population.

<sup>‡</sup> According to the Detran - Department of transport of the State of Pernambuco, in 2013, 2.3 million cars circulated Recife

Unlike other cities in Brazil like Rio de Janeiro, Sao Paulo and Curitiba, which despite having similar urban problems, have a network management and a more consolidated urban transport system and some experience in hosting other mega events (Pan 2007 concerts and festivals International among other events), between others host cities of the 2014 FIFA World Cup, maybe Recife will be the city that will find the biggest challenges to host this mega event, especially the anticipation surrounding the legacy of urban mobility, the biggest problem of the management of the city currently.

### 3. The analysis method

To assess the mega event's strategy for the transport and urban mobility in the city of Recife, according the approach of Eve Kassen , which defines 5 factors that influence the transport planning for mega events : The space and territory for planning; Policy Government ; economic strength , technology a and socials and behavioural trends. And moth 3 guidelines for the mega event have positive result: Strategic vision , planning and coordination , mega event like the catalyser of the development of transport and urban mobility .

The stages of the transportation planning of a mega events considered , according to Carvalho ; Hill ; Taco (2008) , are the pre - event, event and post - event.

From these data, an analysis model which aims to analyse each factor advocated by Kassen at each stage of the event defined by Carvalho was designed, as shown in table 1. In order to understand whether the implementation of the 2014 World Cup in Recife embraces the Kasen's guidelines, in other words, if the mega event to be held in Recife will be well successful during and post event.

**Table 01: Analysis Model Research**

	Pre-event	Event	Post-event	guidelines
Space and Territory	Analysis of the location of the event and the implications on the transport network and mobility	Analysis of the measures adopted for the operation of transport and access to the local network event.	Analysis of plans and projects for urban development and Transport in the region	1.Urban vision; 2.Coordination and Planning 3.Mega Events to catalyse the development of transport and urban mobility
Policy Government	Association of the mega-event strategy with plans and policies for existing public transport.	Government actions and measures of inclusion and access to transport and urban mobility	Evaluate the continuity of plans and projects for the development of transport and urban mobility.	
Economic strength	Investments for transport and mobility			
technology	Technologies adopted for the development of transport and mobility			
Socials and behavioural trends	Dialogue between the actors involved in the development of plans and projects. expectations	Stakeholder participation and locomotion during the event.	Reached expectations transport and mobility.	

Source: Prepared by the author



#### 4. Conclusions

Based on previous experiences with cities that hosted major events Eva Kassen identifies 5 factors that may influence transport planning in mega events. And these factors should be analysed in different stages of completion of the mega event through the plans, projects and actions developed for the transport and mobility of Recife for the World Cup 2014.

This way you can assess whether Recife:

1. Will go fulfill an urban vision with planning for a long term. The mega events associated with a strategic plan, focusing on the ideal city and have an idea of how the mega event can contribute to this vision of the city prior to the event.

2. Look to the mega event as an urban catalyst of the projects for transportation and urban mobility that take the opportunities brought by the games. The high economic investment in urban plans, transport and social benefits cannot be linked only to the time of the event. The mega event should serve as a springboard for continued development.

3. Transport planning coordination and operation. The coordination has key role in three phases of the mega event. It's up to coordination the dialogue between the owner of the event, government, planners and users of transport. Good communication between the various actors will be responsible for defining the ideal desired city, targeting the mega event as an urban catalyst and the operating room during the event.

The research aims to examine, from the optics of the above guidelines, what positive and /or negative results the strategy of the mega event will bring to the transport and mobility in Recife.

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