The role of transport in mega event organization
From bidding to legacy

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Transport and security, essentially under control of Public Authorities, play a major role in the organization, delivery and success of mega events. The aim of this paper is to:

• present a mega event global organization and management structure,
• identify the role and position of transport in the mega event structure,
• outline major interactions of transport with other mega event functions.

The presentation generically covers all types of mega events. But its emphasis is on sport mega events with the Olympic organization -- most complex due to the number of sports involved -- as a red thread. Themes are as follows:

1. Mega event owner
2. Bidding / Host City Contract
3. Mega event organizer
4. Mega event sport “product”
5. Mega event monitoring Commission
6. Host Country Government / City Authorities
7. Transport
8. Airport
9. Security
10. Accommodation / general public + spectators
11. Accommodation / mega event Family/ Medical
12. Non competition venues
13. Competition venues / clusters
14. Media /Technology
15. Marketing / Ticketing / Accreditation
16. Sustainable Development / Environment / Legacy
17. Finances / Sponsoring
18. Knowledge transfer

Throughout the presentation specific reference to Transport is outlined in italics bold
MEGA EVENT STRUCTURAL SCHEME I

1. MEGA EVENT OWNER
   Franchisor
   IOC, FIFA, UEFA
   CGF, BIE

2. Bidding
   Host C Contract
   Guarantees

3. MEGA EVENT ORGANIZER
   Franchisee
   Delivery Authority
   Transport Authority

4. MEGA EVENT SPORT "PRODUCT"
   Program delivery
   City/cultural image
   All client groups

5. MONITORING COMMISSION
   Risk management
   Contingency planning

6. HOST COUNTRY GOVERNMENT/HOST CITY AUTHORITIES
   Infrastructures/
   Event co-funding
   Political+legal matters

7. TRANSPORT

8. AIRPORT

9. SECURITY

10. ACCOM I

11. ACCOM II

12. VENUES I

13. VENUES II

14. MEDIA

15. MARKETING

16. SUSTAINABLE DEVELOPMENT

17. FINANCES

18. KNOWLEDGE TRANSFER

Colour Legend:
- Pink: Mega event global organization and management
- Blue: Mostly public sector interventions
- Yellow: Mega event support functions
Item 1: Mega event Owner

- **The owner:** Each Mega event has an **owner**, sometimes called “**franchisor**”

- **Famous and powerful owners:** National, continental and world mega events are “owned” by chartered organizations covering 10, 50 and up to 200 countries, 208 sport federations, 202 Olympic national committees, such as:
  - IOC—International Olympic Committee (202 countries)
  - FIFA (208 federations)
  - UEFA (53 countries)
  - CGF—Commonwealth Games Federation (70 countries/territories)
  - Asian Games (45 national committees, 40 sports)
  - Pan American Games (42 countries)
  - All-African Games (47 countries)
  - Rugby World Cup (20 countries)
  - FIS, World Ski championship (104 federations)
  - BIE – Bureau International des Expositions-Paris (140 member countries—Shanghai 2010 World Expo will host 165 countries)
  - many others…..

- **Owner’s culture:** Each organization has its a history, often more than 100 years old like the IOC, its traditions, a charter and its own organizational and event management culture.

- **Olympic Games complex structure:** The Games have a complex organizational structure based on a matrix system composed of:
  - 202 National Olympic Committees dealing with athlete delegation matters per country
  - 26-28 sports technically managed by as many International federations Protocol is per country, per national flag. Sport operations are by Federation

- Some mega event owners adhere to organizations like UNEP- United Nations Environment programme, (Kyoto and Bali protocol)

- **Transport – environment:** IOC - Olympic movement - has strong environmental and sustainable policies (Item-16). In principle it will favour environmentally friendly transport concepts, in particular public transport oriented schemes
Item 2: Bidding / Host City Contract / Guarantees

- **Bidding**: is a selection process to operate a choice out of many proposals. This choice will entrust and transfer part or the whole organization of a specific mega event to an “Organizer” in partnership with countries, cities or other entities like national sport federations.

- **Olympic bidding process**: Nine years before a given Games, IOC launches an applicant bidding sequence whereby Cities, one maximum per country (often after an internal 1-2 year contest), will present a full sketch plan of their proposed Games concept (8 themes, 25 questions, 80 page report) and a preliminary budget.

- **Applicant bid**: The Applicant (pre selection) bidding phase covers 8 themes: I-Motivation-concept and legacy, II-Political support, III-Finance, IV-Venues, V-Accommodation, VI-Transport, VII-Security and VIII-General conditions, public opinion and experience.

- **Transport - Applicant bidding**: Within the “transport” theme five sub-questions shall be answered:
  - Transport Strategy and Authorities
  - Transport Infrastructure
  - Airport
  - Transport System maps
  - Transport challenges and
  - Distances and travel times

- **Candidate bid**: Only Cities demonstrating their “ability” to host Olympic Games are short listed. Successful short listed Cities become candidate Cities which shall submit a comprehensive Games proposal (17 themes, 200 questions / 600 page report) to the appreciation of an Evaluation Commission and the Olympic Assembly vote.

- **Transport - Candidate bidding**: At the Candidate bidding phase, the “transport” function has 22 sub-questions in six domains:
  - (A) Transport Strategy and Authorities
  - (B) Airport Arrivals and Departures
  - (C) Transport Supply and infrastructure
  - (D) Transport Demand and Client requirements
  - (E) Transport Operations
  - (F) Games Traffic Command and Communication

- **Bidding robustness**: Such bidding system ensures that only robust and reliable Host City mega event concepts and organizations are proposed. No matter the geopolitical choice, the chosen bid is technically and financially sound.
• **The HCC**: In Olympic practice, the Host City Contract is a **triangular contract** between the “Owner”, the “Organizer” and “Authorities”

• **Host City Contract and guarantees**: Infrastructural developments proposed in the bid are binding by inclusion in the Host City Contract, which gathers all guarantees to be given by the Host country government or/and Host City Authorities. Olympic requested guarantees currently number about 50

• **Transport – guarantees**: Transport guarantees are in addition to basic Games organizer commitments, for example providing free transport during the whole Games for all members of the Olympic Family. Guarantees for transport cover all essential infrastructural Games needs. Five guarantee, s or 10% of total, are asked for this function:
  o Projected capacity improvements at your airport(s)
  o Planned and additional transport infrastructure projects
  o Projected fleet and rolling stock capacity improvements
  o Delivery of Olympic lanes
  o Transport and traffic management command and control centre

• **Transport - assessment weight**: Mega event transport concept and traffic organization and management policies carry an important weight in the bid evaluation process and in bid comparative assessment. A mega event bid with a poor transport concept has no chance to succeed

• **Transport - bidding task**: Bid preparations by many Cities for many large mega events generate considerable mega event planning work / including substantial mega event transport logistics developments all around the world

• **Transport - knowledge transfer**: (Item-18) Mega event owners are increasingly providing mega event “transfer of know how” to potential bidders prior to their bidding work. Transfer of knowledge is made available to bidders through a 4 day Seminar covering all mega event key functions and interactions. The philosophy is simple, the better informed the bidder, the better resulting bid
Item 3: Mega event Organizer

- **The Organizer:** or Franchisee or OCOG is a key player. He is the driving force in charge of mega event delivery. In Olympic mode, the Organizer is called OCOG - Organizing Committee for Olympic Games (in Sydney - SOCOG 2000, in Beijing – BOCOG 2008, in London- LOCOG 2012)

- **From bid success to “Organizer”:** The legal and management structure of the Organizer shall be defined in the candidate bid, it is part of the bid and of guarantees to be given. In case of success, an interim transition “Organizer” shall be “immediately” ready to proceed with foundation planning work and launching essential long construction duration infrastructural projects with related governmental agencies

- **Delivering the mega event:** Between 4 and 7 years to deliver the mega event depending on the mega event owner. UEFA has 5 years and IOC 7 years. IOC and the BIE (Bureau international des expositions-Paris) have the longest preparation durations, mainly due to event complexity and infrastructural development needs in many areas: multiple sports venues, large number of national and theme pavillons, external and internal transport systems, etc

- **Mega event operating budget:** For the Summer Olympic and Paralympic Games (a total of 60 days of operations), the current operating budget amounts to 2 – 3 billion US$ generally fully covered by revenues (Item-17)

- **OCOG peaking staff:** OCOG is a huge temporary multi function organization peaking at 3000 - 4000 staff at the time of mega event delivery. One year after this structure is totally dismantled except a dozen accountants

- **Transport – Department:** An OCOG must have a Transport Department to do the strategic and operation planning, to procure, test and deliver transport services for the Game

- **Transport Department Director:** A Director shall be appointed 5 years before the Games, to allow him to carefully understand Olympic transport “mechanics” by monitoring previous Games (G-4 years). The OCOG Transport Director will structure and procure all Olympic transport deliverables and coordinate the reinforcement of public transport services for spectators, workforce and volunteers. Professional staff at the Transport Department reaches 100-120 just before Games time. Transport paid and volunteer staff in the field during the Summer Games might reach 5000-7000
• **Transport – Delivery Authority:** In some instances the OCOG, in agreement with Government, may delegate all infrastructural development functions to a special Delivery Authority. For London 2012 this body is called ODA - Olympic Delivery Authority. This Authority shall deliver all sport venues, transport infrastructures and facilities and soft operation systems such as the Olympic lane network. Optimum coordination with OCOG shall be ensured.

• **Transport – Transport dedicated Authority:** In reaction to Atlanta’s transport difficulties, Sydney created a special para-public transport body called ORTA – Olympic Road and Transport Authority. ORTA was created to assume all responsibilities in preparing, procuring, testing and delivering all Olympic transport services. As example: ORTA had to run a temporary bus fleet of 4000 buses and a car fleet of more than 5000 cars. Temporary depots for such a large operations had to be set-up. Optimum coordination with OCOG shall be guaranteed.
Item 4: Mega event “Product

- **The product:** is the “event” or a series of events such as the Olympic Games or football Cups or Tournaments

- **Transport and mega event geography:** Geographical event locations, dispersion / concentration of venues, grouping of venues in clusters have considerable implications on transport, on the amount of services to be provided to interlink the whole temporary system

- **Transport –services for multi sites:** Summer Olympic Games encompass 26 sports involving 20 to 25 competition venues in town, 4-8 out of town competition venues (sailing, rowing, football), 20 training venues and 4 to 6 non competition venues like the IBC/MPC (International Broadcast Centre/ Main Press Centre) with workspace for 20’000 accredited media, IOC hotels, Olympic Village and Medias Villages

- **Mega event duration:** Mega events have different programs and durations:
  - Very short one to two day event
  - Two to three weeks Tournaments, Olympic Games
  - One month Tour de France
  - Short 3 month Expo
  - Long 6 month universal Expo

- **Transport –in totally temporary site:** Mega events might attract 200’000 people over 7 days in temporary rural facilities where temporary transport, accommodation, catering, logistical organization shall be set-up

- **Transport – in permanent structures:** Mega events might attract 300’000 people over 15 days in mostly existing concert facilities in a 20’000 inhabitant tourist resort with no additional parking facilities but a strongly re-enforced public transport system

- **Sport and culture:** Mega events of a certain type like sports are often accompanied / combined with cultural events, etc

- **Transport – live sites+ fan zones:** In addition to spectators and fans with tickets, more and more events in sport and music, attract very large numbers of non ticketed visitors, often twice to four times as many as ticketed people. Live sites and fan zones are to be planned and secured. They have a considerable impact on transport planning and concomitant operations of the “mother” event
- **Transport – included in event ticket**: New concepts of “free 24 hour public transport” linked to the event / the event ticket is a transport ticket. This is done at City scale or country scale. Free public transport all over Switzerland for next June EURO 2008 ticket holders!

- **Transport – multiple client groups**: Mega events have diverse structures of client groups, which imply different transport services, quality of services, priorities, gold-silver-bronze security levels, etc. One of the biggest challenge of Transport is to understand, estimate and cope with these client group travel demands.

**ILLUSTRATION No 2**:
Example of Football Tournament “pyramid” of client group types with ranges of client numbers and types of transport systems to handle each client group travel demands.
Item 5: Monitoring Commission

- **Mega event monitoring**: In Olympic mode, after a 2 year bidding period (G-9 to G-7 years), the Games are attributed to a Host City (G-7 years). From G-7 to Games delivery plus one year (G+1), a Coordination Commission monitors Games preparation and progress.

- **Risk and contingency**: Due to the sheer size, magnitude, number of stake holders and client groups, mega event monitoring is aimed at “reducing risks”. When major problems arise, “contingency” plans and alternative schemes shall be found under its leadership. Yellow (or red!) cards can be attributed to the Organizer.

- **Knowledge transfer**: Based on the specific needs (or shortcomings) of the Organizer, the Monitoring Commission decides of specific “transfer of knowledge” seminars (Item-18) or other training methods.

- **Transport – contingency solutions**: As example of contingency, Sydney’s organizers realized 4 years before the 2000 Games, that a new international airport promised in the bid could not be built due to strong citizen oppositions. Full extension of both domestic and international terminals at the existing Sydney Airport was proposed to the monitoring Commission as a viable contingency alternative. Special monitoring of this alternative development had to be conducted.

- **Transport - testing**: In Olympic mode, all competition venues and most key new or rehabilitated technical systems shall be tested in principle “one year” before the Games with mega event of similar sizes. Testing is a “learning-by-doing” knowledge enhancement and training procedure (Item-18). Testing is one of the most efficient arm of the Monitoring Commission to ensure best possible Games delivery.

**ILLUSTRATION No 3**:

The whole mega event process “from bid to legacy” is illustrated. A two year bidding process / shortlisting / candidate Cities selection by vote, leads to the choice of one Host City.

The next seven years of preparation towards Games delivery are overseen by an Executive Monitoring Commission.

The last year after Games delivery is devoted to Games Final report production as well as finalizing a Report called “OGI - Olympic Games Impacts”, an 11 year assessment of sustainable development parameters.
MEGA EVENT GLOBAL PROCESS
FROM BID TO LEGACY

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MEGA EVENT MONITORING COMMISSION

APPLICANT BID

1
2
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10

CANDIDATE BID

successful bid

Foundation planning
Strategic planning
Operations
Testing
Games Delivery
Games Legacy

Short listing
IOC vote

Olympic Games Impact Study - 11 years

2 YEARS
7 YEARS
10 YEARS
22.1.2008
Item 6: Host Country Government / Host City Authorities

- **No transport = No mega event**: No mega event can take place in any City, region or country without the support / acceptance of Public Authorities at the various institutional / geographical levels involved. Public Authorities involvement is also needed to structure and participate in the bidding effort.

- **Guarantees and Government**: More and more mega event owners require bid guarantees to be undersigned by competent Government authorities at the concerned levels.

- **Transport infrastructure**: Public Authority involvement is primarily sought in the domains of transport infrastructures and of sport facilities and equipment development.

- **New specific mega event legislation**: National Government might have to change or adapt certain legislations to better host the mega event. Such is the case of the UK, with a special “Olympic law” enacted by Parliament for London 2012 Olympics.

- **Transport – infrastructure development**: Development, upgrading, extension and creation of new transport systems of all modes (air, road, rail, urban public transport) are essential components of mega event bidding, promoting and of Games delivery.

- **Transport – mega event increasing congestion**: Most mega events take place in Cities or metropolitan areas with a high degree of congestion and they certainly aggravate the problem by generating hundreds of thousands of additional travel journeys.

- **Transport - Olympic reserved lanes**: To overcome this problem, an effective network of Olympic reserved lanes, shall be provided between non-competition venues (IOC Hotel, Olympic Village, IBC/MPC, media villages) and competition venues. These traffic lanes; which shall be continuously marked and signed, are dedicated to accredited Olympic vehicles only.

- **Transport - Olympic lane network**: This network shall be implemented by the various concerned road authorities and tightly enforced by Traffic Police to ensure fast and reliable travel times. In many cases Olympic lanes require special legislation (Olympic lanes are part of Olympic Law for London 2012).

- **Transport - legacy**: Mega events are often seen as catalysts for transport and sport projects developments. Most transport projects go obviously far beyond their role during the Games, it is often a major legacy (Item-15).
• **Mega event public sector support:** Besides hardware, Public Authorities are called upon to provide certain operational services in the fields of public transport, health services, certain types of accommodations and last but not least security. In the bidding process, mega event Public Authority support is as important as popular acceptance.

• **Security:** is a major and worldwide mega event concern. Hosting countries and Cities must come up with increasingly bold and sophisticated security systems. Most of them affect directly transport from the Airport arrival/departure function, to accommodation and to all competition and non-competition venues (Item-9).

• **Environment:** is also a domain where Public Authorities have a major role to play (Item-16) to proactively counteract ecological opposition which might threaten the mega event existence.

• **Legal matters:** are to be streamlined by Authorities wanting to host a continental or world mega event. Linkage of visas with accreditation is an example.

**ILLUSTRATION No 4:**

*Illustration No 4:

Mega event functions from transport (Item-7) to knowledge transfer (Item-18) are presented in more details in the next scheme*
Item: 7 Transport

- **Transport challenge:** Challenge of outstanding magnitude. Summer Olympic Games are by far the most extreme additional traffic demand that a Host City can ever have. With 8 million ticketed Games over 16 days and more than 200’000 accredited workforce every day, it means additional traffic of 1.4 to 2.0 million journeys per average day.

- **Transport mega event system:** Two major dimensions:
  - Access to the Host City or to the network of Host Cities in case of a Football Tournament by air, road, rail, sea of millions of ticketed spectators an mega event non ticketed visitors
  - Transport and mobility within the Host City or/and Host Cities

- **Transport superimposed urban systems:** A simplified description of the mega event transport system supply side calls for three superimposed sub-systems:
  - **I** – **Permanent ground base transport system** to handle all “normal” City traffic, but with selected across the board traffic reductions
  - **II** – **Temporary dedicated chartered transport system** for the mega-event Family and all accredited
  - **III** – **Temporary re-enforced public transport system** to absorb the overload of ticketed spectators, non ticketed visitors and fans, accredited workforce and volunteers

- **Transport sub-system procurement and operations:** Many types of organizations and responsibilities have been used depending on general “Organizers” policies. Among the most common:
  - The OCOG Transport department is in charge and operates the system (Athens model)
  - A special purpose Transport Authority is created and operates the system for the OCOG (ORTA- Sydney model)
  - The existing Transport Authority will deliver all extra transport services requires (Probably the London model with Transport for London in charge)

- **Transport integrated command:** During major mega events all transport and traffic shall be under one command, called the “4C” = CCCC “Command, Control and Communication Centre”

- **Transport costs:** Mega event transport costs depend on the quantity of services offered to various client groups including “free transport” for accredited and ticketed people. In Olympic mode, transport costs amount to 3 – 5% of the Games operating budget or 50 – 150 million USD
ILLUSTRATION No 5
Three superimposed transport operating system layers, one permanent - two temporary, serving distinct needs of specific client groups

* With new, extended, renovated infrastructures and Operation systems
  With connections to national + international transport systems
Item 8: Airport

- **Air travel major mega event traffic share**: In a globalized world with international / intercontinental events, air travel plays an overwhelming role. The supply side shall consider the superposition of normal commercial flights, mega event charters and low cost carriers.

- **No airport = no mega event!** as simple as that!

- **Airport = mega event port of entry**: As port of entry, the airport(s) fullfills many functions:
  - Hospitality for all mega event guests, including Head of State, VVIPs, VIPs, dignitaries
  - Arrival formal accreditation based on pre-accreditation documents
  - Transfer terminal for mega-event Family on mega event dedicated transport to all non competition venues (mega event HQ hotel, IBC/MPC, Olympic Village, Team residence, Media Villages). For some client groups handling of a lot of luggage and equipment
  - Transfer terminal for spectators and non ticketed visitors to re-enforced public transport links to the City, to competition venues, to live sites / fan zones

- **Airport capacity and performance**: Mega events are tough operations for airports as they generate highly peaked travel flows, the worst being the last “bump out”. Special airport management procedures have to be taken, both on the airside (use of maximum airplane storage areas) and on the City side to handle mega event flows in addition to normal flows

- **Airport own customers**: Airport operator will not accommodate mega event crowds at the expense of ordinary business. Mega event traffic procedures shall be kept similar but enlarged to handle supplemental flows

- **Airport special temporary facilities**: Extremely high peaked traffic demands often require numerous additional gates. Temporary additional gates are sometimes provided. To lower “bump-out” pressure, off airport mega event check in facilities shall be considered

- **Airport ground transport**: Host Cities take the opportunity of a really big world mega event both to substantially increase the airport capacity and sometimes to develop an airport to City Centre rail link (case of Beijing)

- **Transport Airport to City link**: Mega events require congestion free Airport to City transport connections. Rail- if available—should be supplemented by special traffic priorities such as Olympic Lanes on the Airport Motorway.

- **System of airports**: Often a single airport is not enough to handle the total mega event load. A second back up airport shall be prepared to absorb some mega event traffic. Ground transport shall be available. A back up airport is also warranted when general weather conditions call for main gateway airport closures
Item: 9 Security

- **Mega event security tradition/history**: Since the Munich 1972 Olympic Village terrorist attack, security has become a major concern for multi-nationality mega events

- **Security global task**: Security permeates every aspect of Games / Tournament planning, operations, testing and delivery. Costs are most often vastly underestimated

- **Mega event security, an international affair**: Security at the City and metropolitan scale (including secret service intelligence) is vital for transport and mega event strategic transport planning (learning from Madrid and London metros terrorist bombings). It has to tie into international security due to the presence of teams of most “exposed” nations

- **Security planning and design**: From early beginning of venue design and operation planning (Item-13), security has to be embedded into concepts, layouts, routes, access controls, etc

- **Security and crowd management**: Security and safety are important matters in relation to management and surveillance of very large crowd. Security strategies to handle football hooligans require multi police cooperation and Stadium special treatment with two Front-of-House (Item 13) separated access schemes for fans “A” and “fans B”

- **Venue transport and security strategic design**: Each competition venue or venue cluster and each non competition venue shall go through a systematic overlay design incorporating:
  - An external “traffic+parking” control ring sometimes 500m deep; no through traffic and only local and mega event authorized traffic can penetrate this perimeter
  - An external “soft security ring” with all access controlled by VPC = Vehicle permit checks
  - An internal “hard security ring” with ticket and mag and bag full check for Front of House spectators and with accreditation both for people and vehicles. At that ring only duly accredited vehicles can enter by going through VSS = Vehicle screening station
  - Field of Play perimeter special security measures (not all made public)
Item 10: Accommodation / spectators-workforce-volunteers

- **Accommodation major challenge**: Toughest problem for bidders and organizers is to master and duly reserve sufficient accommodation to meet mega-event huge requirements. Accommodations are often searched at in circles: less than 40km or about 1 hour travel time, and 40 to 100km or 2 hour travel time depending on the quality and density of metropolitan and regional transport systems.

- **Accommodation in a network of Cities**: In small countries like Switzerland and Austria / EURO 2008, accommodation is be considered at the national scale in areas where the rail system is very dense, fast and frequent and operated at night. For EURO 2008 ticket holders, free public transport on the entire Swiss rail system will be available.

- **Accommodation variety**: A large spectrum of accommodations shall be proposed to spectators and non-ticketed visitors. Alternative accommodation such as renovated campus housing, new housing projects, quality camping grounds, trailer parks, etc.

- **Transport to serve accommodations**: It is one of the major mega event task to move spectator, workforce and volunteer crowds from dispersed origins to selected competition venues. In Olympic mode, the competition program changes everyday, thus transport demands and transport routes. Knowledge of spectator accommodation locations is essential for transport service planning and scheduling.
Item 11: Accommodation / Mega event accredited family / Medical

- **Accommodation mega challenge in one Host City:** Huge requirements, often more than 35'000 rooms of high quality for the Summer Games. Special additional needs, for Olympic athletes, are met by providing an Olympic Village of 16'000 to 17'000 beds with all village living amenities under tight security. Also for media (20'000 in Summer Olympics and 11'000 in Winter), special urban projects or so called “Media Villages” are fully rented for this target group.

- **Accommodation mega challenge for multiple Host City event:** Similarly very high aggregate requirements (between 2000 to 7000 quality rooms / per City for mega event organizer alone) occur for Tournament type mega event (FIFA or UEFA football tournaments). If Host Cities access transport capacities are not sufficient, there is more pressure on accommodation. If accommodation is in shortage, more pressure will develop on “same day” transport needs.

- **Mega event Family transport to be organized from accommodation to all venues:** In Olympic mode specialized sub transport systems are operated to serve the needs of specific clients groups:
  - Athlete transport system based on the Olympic transport mall
  - Media transport system based on the IBC/MPC hub transport mall
  - Olympic VIP and top staff fleet based on the IOC hotel hub
  - Sponsor transport

- **Dedicated client group transport:** After many poor experiences of Olympic buses mis-directed, not finding their way, preference is given to fully dedicated bus system per client group. So each client group will have their own busses and drivers as well as specific bus depot. In the case of athlete transport it is preferable to have the bus depot next to the Olympic Village.
Item 12: Non Competition Venue

**Non competition venue definition:** All venues planned and operated as support facilities for the mega event. These are:
- IOC HQ Hotels
- IBC/MPC, International Broadcast Centre/Main Press Centre,
- Airport arrival and departure and airport Olympic terminal area
- Olympic Village
- Media Village(s)

**Transport for non competition venues:** Most venues listed above are large and intense activity centres. For Media it shall be 24h/24h transport services. Advanced transport service planning is essential as well as real time monitoring to adapt to program changes. Non competition venues must be connected to the Olympic lane system to insure on time delivery of transport services

Item 13: Competition Venue and Clusters

**Venue typology:** Very large diversity of competition venues
- open (Stadium) / enclosed (Arena),
- single / multiple sites,
- stand alone / cluster
- enclosed / linear site (marathon, cycling race, Tour de France)
- one City/ many Cities,
- one country / many countries (EURO 2008 Austria-Switzerland)
- existing permanent facility / totally new venue
- temporarily extended site / fully temporary venue

**Transport – variety of venues:** Permanent venues benefit from past accessibility and operations experience. New, vastly extended or temporary venues need new specific accessibility plan to be tested before mega event delivery

**Venue are operational focus points:** Competition venues concentrate all mega event organizational functions in a particular space: sport, all forms of media, technology and timing, protocol, medical, security, catering, cleaning, facility logistics and transport. Integration of these functions is essential and shall be tested well ahead of the mega event with another event and all required procedures like ticketing and accreditation.
· **Venue main strategic components:** Competition venues can be seen as a concentric system defined by four areas with their limits:
  - I -- *Field of play in the middle* (or beginning and end of a linear venue, like the marathon)
  - II -- *Security hard Ring*
  - III -- *Security soft Ring*
  - IV -- *Traffic + parking control perimeter*

· **Two sided venues:** Generally competition venues have two sides:
  - *Front of House for the ticketed public, spectators, fans:* in some cases Front-of-House is divided in two sectors to isolate fans or supporters “A” from fans and supporters “B”
  - *Back of House for all accredited support and logistics functions* to support the delivery of the event. Athletes, teams, mega even officials and technical staff, medical, media and security are all Back-of-House clients.

· **The transport / security pair:** These two functions are planned and operated with independent procedures on the Front-of-House “ticketed” public side and on the Back-of-House “accredited” mega event logistics side

· **Transport – venue FOH:** All passenger transport have public transport unload and load zones outside Front-of-House soft Ring

· **Transport – venue BOH:** Accredited persons can enter Back-of-House soft Ring on foot or by vehicles; if allowed further into the hard Ring, passengers will have to be mag and bagged and the vehicle fully inspected and screened often by military security forces

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**ILLUSTRATION No 6:**
The venue structure with four concentric security and transport ring areas is schematically shown below

The case shown is a football venue with a match risk implying separation of Front-Of-House in two fully distinct sectors “A” and “B” for two fan crowds

Back-of-House is more complex because it shall host not only selected accredited clients and logistical staff but also vehicles which must be fully inspected and stored during the event
VENUE TRANSPORT / SECURITY LAYOUT

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FRONT OF HOUSE - FOH TICKETED SPECTATORS + FANS "A"

BACK OF HOUSE - BOH-ACCREDITED ENTRY (+ vehicles)

ACCREDITED TEAMS + ATHLETES EVENT OFFICIALS MEDIA PRESS VIP SPONSORS EVENT LOGISTICS SECURITY

FRONT OF HOUSE - FOH TICKETED SPECTATORS + FANS "B"

Legend:
- I Field of play
- II Hard security ring
- III Soft security ring
- IV Traffic perimeter
- PTS-A Ticketed Entry
- PTS-B Public Transport
- Stations A or B
- LZ Load Zone
- VPC Vehicle Permit Check
- VSS Vehicle Screening Station
- AE Accredited Entry
- AP Accredited parking
- BH Bus holding area
Item 14: Media – Broadcasting – Press – Internet - Technology

- **Media, a very large client group:** Accredited media is a very large client group: more than 10’000 at Winter Games and more than 20’000 at Summer Games. Generally there are substantial numbers of non-accredited media.

- **Media Transport challenge:** After “athlete transport” and “VIP –transport”, media transport is the most challenging. It has to operate 24h / 24h, connecting media accommodation, to IBC/MPC and to all venues. Media transport has also to deal with customers carrying rather heavy equipment. Media transport shall be on time.

- **Media Transport requirements:** Experience shows that it is best to organize all media movements through a “media dedicated transport fleet”, using the same drivers, the same busses and same media bus depot (s), whenever possible not far away from the IBC/MPC.

- **Transport –Media image:** In general, media tend to be highly critical of “transport”, before and during the event. It is highly advised to start the Olympic priority lane system more than a week before Games Opening Ceremony to show to Media, efficient transport service quality to be provided during the Games.

Item 15: Marketing – Ticketing - Accreditation

- **Accreditation definition:** Accreditation defines the holder’s right to enter specific mega event designated spaces and to use specific transport systems. In Winter games accreditations number more than 100’000, in Summer Games about 225’000.

- **Accredited transport:** After spectator, workforce and volunteer transport, accredited Olympic Family transport is the largest transport burden of the mega event.

- **Transport part of the event experience:** Increasingly journey to an event and the event itself are covered by the same event ticket. Mega-event tickets therefore provide” free transport” the day of the event by all public transport modes or part of them.

- **Transport and ticketing coherence:** Ticket numbers are generally estimated by marketing with or without knowledge of transport system capacities. Lack of transport capacities (Torino 2006 mountain transport system) might lead to considerable ticket volume reductions. Ticket sales must be coherent with venue and transport access capacity.
Item 16: Sustainable Development
– Environment - Health - Legacy

- **Mega event environmental policies:** Depending on the mega event owner and its global policies, environmental standards are to be respected:
  - in mega event infrastructure design
  - in equipment, overlay standards and procurement
  - in transport policies globally favourable for the environment
  - in procurement of transport rolling stock and vehicles with low emission and good energy saving performance
  - in general operations

- **Health and Environment:** These two domains are interdependent, the most obvious being air pollution. Since mega events take place in very polluted Cities, air pollution is worrisome for the general public but even more for endurance athletes who have to deliver their highest best performance at the Games. Reduction of air pollution is a must, but how and exactly to what level remains an open question

- **Environment, Health and Transport:** Five years of bold and effective mitigation measures taken by Beijing 2008 organizers to reduce air pollution in August (the worst month) have not proven sufficient to reduce air pollution to levels acceptable by IOC medical specialists. Substantial traffic reduction (about minus 43%) might be a mean to contribute to a better situation. It is a win-win situation since it allows better and more efficient operations of Olympic lanes and better performing surface public transport, main carrier of the Games
Item 17: Finances – Sponsors – Direct revenues – Broadcasting Rights

- **Mega event revenues four main sources:**
  - Direct revenues from ticket sales, merchandising, lottos
  - Sponsoring at world, national and local levels
  - Broadcasting rights
  - Public Subsidies

- **Mega event revenue-expense balance:** Olympic mega event revenues generally cover mega event operating costs

- **Mega event expenses:** On the expenses side, two fundamentally different expense budgets shall be distinguished:
  - **Mega event operating expenses** covering all operations linked to the mega event delivery
  - **Infrastructure developments** are part of public sector long term investment budget and their costs shall not attributed to the mega event. Generally these costs are part of the bid and confirmed by guarantees

- **Transport investments:** Transport infrastructure developments guaranteed by government generally amount to billions of USD (6.0 billion for London 2012, 4.5 billion USD for Sochi 2014)

- **Transport operating costs:** Mega event Olympic Family transport operating costs are covered by OCOG budget, generally 3 to 5% of full budget or 50 to 150 million USD
Item 18: Knowledge transfer / Observer Program / Testing

- "Not rediscovering the wheel": Although each new Host City / Host country is different from former ones, world mega events, in each domain, remain the same “product”. Beijing, Sydney, London or Athens will deliver exactly the same number of events, scheduled the same way. But organizational challenges remain enormous. Only precise knowledge of former Games can help “not to rediscover the wheel”, not to improvise too much, but to improve based on experience, to reduce risks by former experiences better understanding

- **Knowledge transfer has many forms:**
  - Observer programs – planned observation of current mega events by future organizers
  - Secondee programs – staff of “Games+1” working with staff of “Games+0” on Games actual delivery,
  - Topic oriented training seminars during the Games 7 year preparation (Olympic Games have 34 functions and transport is only one of them)
  - Bid introduction seminar – 4 day extensive seminar providing an updated view of the mega event product and of all its key functions and interactions
  - Technical manuals covering all 34 mega event functions
  - Mega event knowledge and statistical data base

- **Learning by observing**: Host City 2016, to be designated in 2009, will have four opportunities to have specialized delegations observe four former Games: Beijing 2008, Vancouver 2010, London 2012 and Sochi 2014. These observations intervene at very different and useful times of the City own preparation

- **Learning by doing and by testing**: Testing is another efficient transfer of knowledge opportunity. It is Olympic practice to test any venue, in principle one year prior to the Games. Test events shall be carried out within the environment of the new, upgraded, extended venue with staff trained to behave in Olympic mode

- **Transport testing**: New transport infrastructure systems, new accessibility schemes to competition and non-competition venues shall be tested with significant “test event crowds”. The object of testing is to assess the performance and reliability of the system and scheme in place as well as staff training and chain of command effectiveness

- **Transport testing for Beijing 2008**: In August 2007, one year prior to the 2008 Games, a 4 days, “odd-even license plate prohibition” traffic test was conducted to measure improved operating speeds throughout the City. Also an 8 km, Olympic lane was tested to observe and measure traffic performances in a densely congested system
• **Mega events - what impacts?** Question often raised. Since the start of the Beijing Games, IOC has launched its first “Olympic Games Impact (OGI)” study. This research effort spans 11 years, from 2 years before the Host City choice to 2 years after Games delivery. If there is political or scientific interest this Impact study should be extended to at least four years after Games end to provide more representative and complete results

• **“OGI - Olympic Games Impact”:** This study attempts to measure the three dimensions generally associated with sustainable development:
  o environmental,
  o social and
  o economic
A distinction is made between activities directly related to the Olympic Games called “event indicators” and the general context of the mega event or “context indicators”. These indicators are defined and measured over 11 years. They total about 150: 40 in environment, 60 societal and 50 in economics

• **Transport and sustainable development:** In 2010, the first OGI full study performed during Beijing 2008 preparation and delivery will be issued. It will provide qualitative and quantitative answers about Olympic transport development impacts and on Beijing City sustainable development during the first decade of the XX1st century

**ILLUSTRATION No 7:**
Timing of various Games observer possibilities are shown on the next picture.

Beijing 2008 (horizontally) will have “official” observers from Olympic Host Cities 2010, 2012, 2014 and candidates for 2016

Future 2016 Host City (vertically) will have the opportunity to take part in Observer programs of 2008, 2010, 2012 and 2014.
OLYMPIC KNOWLEDGE TRANSFER AND GAMES OBSERVER PROGRAMS

Legend:
- Summer Games Preparation
- Winter Games Preparation
- Observing Beijing 2008
- Observing Vancouver 2010
- Observing London 2012
- Observing Sochi 2014

Olympic Games Knowledge Management (OGKM) Seminars and more than 40 Olympic Function Technical Manuals complete the Transfer of Knowledge (TOK) global program.
BIBLIOGRAPHY:


May be downloaded from www.mobility-bovy.ch

Prof. Ph Bovy
Chexbres, Switzerland, January 22th 2008