Transportation accelerated developments for world mega-events

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Agenda

1. World mega-event tremendous transport challenges and opportunities
2. World mega-events as catalysts for transport developments
3. What WCup 2018 immediate consequences for Russia transport perspectives?
4. Efficient technologies for short term massive transport capacity improvements

1. Mega event challenges+opportunities

The challenge, in an already saturated City or network of Cities, is to host:

- **millions** of mega-event attracted international and national spectators, visitors, workforce and logistical traffic in addition to normal background traffic
- during in a **very short period** (two weeks / one month) with extremely sharp mega-event in and outbound traffic peaks
- London 2012 Olympics announces 3 million additional transport journeys on peak days

Maracana: both Copa 2014 & Olympics 2016
In WCup 1950, 199'854 tickets / now 78'000!
500 million $ for current upgrade
1980 -- 2020 imposed behavioural change …from 95% car to 95% public transport

Beijing chaotic traffic conditions 1 year before the 2008 Olympic Games

Biggest world sport mega-events with contrasted logistics

**FIFA Football World Cup (2018 in Russia)**
**IOC Summer Olympic Games**
**UEFA-EURO Football Tournament**
**IOC Winter Olympic Games (2014 in Russia)**

Four largest, world most TV viewed and world most complex sport mega-event transport and logistical challenges

Normal versus “world level” conditions

**Observation:**
- 70’000 spectator matches take place every week in my City without major problems!

**Question:**
- What is so different between a “regular” big match and a continental or world Cup tournament match?
**Answers:**

- **World media coverage** = 24h/24h massive world coverage with high quality definition requirements
- **International spectators and fans** = very significant share / multilingual communication
- **International – national –regional – local transport chain** = to be streamlined with extremely strong peak flows on airports
- **Travel magnitude unpredictability** = on knock-out matches // variable numbers of non-ticketed visitors
- **Accommodation** = outstanding pressure on hotels and on cheap quality accommodation for fans/visitors
- **Security** = very much re-enforced for all client groups

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**Barcelona 1992 Summer Olympic Games**

- **1985 - 1992 massive City urban refurbishment and City image improvement** (City tied back to its sea coast)
- **Massive 7-year integrated transport system improvements on major arterial roads and public transport** (Olympic transport budget four times all other Olympic infrastructure budgets)

**=**

- **After 1992 Games, Barcelona jumped to fourth place of European most tourist attractive City** (behind Paris, London and Rome)

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**Barcelona fourth most tourist visited city of Europe after 1992 Olympics**

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**Germany 2006 FIFA-WCup**

- **No need of exceptional transport investments** in the excellent “compact” national motorway, railway and airport system and its international linkages
- **Upgrade of Stadium infrastructure**
- **Very efficient, well planned, convivial and secure transport and traffic management schemes** for Cities, Stadias and fan zones
- **Tremendous success**: 3.5 million tickets / more than 12 million visitors
Beijing 2008 Summer Olympic Games

- Sustained automobile growth of 1000 new cars per day (1 million additional cars in 3 years)
- **Beijing 2001-2008 transport system progress of 20 years in 7 years** (2 more motorway rings and many radials – metro from 3 to 8 lines – airport third terminal)
- **Advanced centralised road traffic management and controls** (300 km of mostly motorway Olympic lanes)
- **Extremely strong traffic and environmental control measures** (40% car traffic reduction / 60 days)
Beijing most comprehensive traffic control and command centre

300 km of reserved Olympic lanes on motorway median lanes

Beijing policeman controlled arterial Olympic lane on Tian’anmen

Beijing centrally controlled temporary motorway Olympic lanes
Beijing new airport express Olympic lanes for Olympic Games passengers

RIO 2016 Summer Olympic Games

- Four Olympic zone concept to drive the City urban redevelopment and City linkages
- Most ambitious 7-year integrated transport system improvements (Olympic transport budget five times more than all other Olympic budgets)
- Considerable effort to triple public transport system performance and legacy (+13km metro, +80km suburban rail renovation, +150km new BRT)
- BRT- Bus Rapid Transit (Brazilian 1970 Curitiba invention) can provide very high capacity transport gains in 6 years—with efficient public transport link to Rio Int. Airport

Rio four Olympic zone Games and metropolitan transport concept

Rio –Renovated suburban rail + new metro + Bus rapid transit public transport system
2. World mega-events as catalysts

- Sport world mega-events are part of an extremely competitive world
- Winners must deliver what they promised. This usually means a **tremendous amount of “Sport”, but even more, of “Transport” infrastructures and their support management systems**
- Particularities of world mega-events are numerous and outstandingly interesting. They have strong implications on Host City transport developments
Outstanding mega-event issues…

1. Exceptional 100% political public support
2. Compulsory project delivery deadline
3. Planning for extreme but temporary loads
4. Temporary versus permanent projects
5. Transport hardware versus software
6. Faster project development procedures
7. Integrated intelligent traffic management
8. Need for “public-private” partnerships
9. Testing traffic and HR system 1 year before
10. Complexity mitigated by knowledge transfer

2.1 Exceptional 100% political support

• In a context of world competition to host world mega-events, bidding Countries and Cities cannot succeed without a solid unified strong political support for the mega-event
• President / PM of RUSSIA V. Putin for Sochi 2014 Winter Olympic Games and FIFA 2018 WCup
• President of BRASIL I. Lula + Governor of Rio + Mayor of Rio for Rio 2016 Summer Olympics

2.2 Compulsory project delivery deadline

• World mega-events are “too big to fail”, the Opening Ceremony or Opening match is fixed to the “exact” hour/minute/second on all world medias providing life-coverage to 3 billion viewers
• Beijing Olympic Opening Games Ceremony was on August 8th, 2008 at 8pm and 8 seconds (metro line 8)
• All infrastructure projects / transport / logistical / technology / telecom systems “must” absolutely be ready and fully operational on time

Olympic Games organization: a race after time
The Opening Ceremony opens at a fixed date, hour, minute, second!
Large transport tunnelling projects always at deadline risks

2.3 Planning for temporary but extreme loads

- Olympic Host City to operate during 16 days with 2-3 million additional traffic trips per day
- FIFA World Cup will load the national + 10-12 City transport systems -- including air links and airports -- with 3 million ticketed spectators and probably 10 million non-ticketed fans and visitors
- Huge transport and security challenges for Olympics with 300 competitions and WCup with 64 matches

2.4 Temporary versus permanent projects

- Strategic choices of venue capacities // Stadium with 30’000 permanent capacity + 15’000 temporary seating because “economic sustainable legacy” is 30’000 not 45’000
- Similarly for transport, City overall transport capacity cannot be doubled or quadrupled for just one month
- Considerable amount of temporary Innovative traffic control measures will be a “must”

2.5 Transport hardware versus software

- New transport heavy infrastructure to be developed only if proven long-term use and legacy and if “no risk project delivery”
- Mega-event operations—less than a month-- are a very short parenthesis in the transport project life
- Transport + traffic investment priorities shall be in advanced comprehensive, multi modal management systems linked to security
2.6 Faster project development procedures

- For each Olympic Games usually a set of new laws are passed by government to facilitate working procedures at international/national/local levels.
- To reach “zero risk” late project delivery, special non-bureaucratic working methods shall be adopted. Independent dynamic full scope monitoring is a “must” for both mega-event owner and mega-event organizer.

2.7 Integrated intelligent traffic management

- In “normal” conditions, each transport sub-system optimizes operations for itself.
- In mega-events, extreme traffic loading conditions on most transport systems calls for integrated coordinated operations.
- A TT-CCCC -- Transport and Traffic Control-Command-Communication Centre shall cover all City transport systems.

2.8 Need for “public-private” partnerships

- Mega-event planning, operations and delivery costs are generally covered at 100% by mega-event revenues (top sponsors/TV rights, ticketing and merchandising).
- Mega-event transport infrastructure costs are mostly covered by public funding. But private partnerships are more and more common (financing of rail, metro and BRT rolling stock, Airport and rail terminal facilities, toll systems, etc).

2.9 Testing traffic and HR systems -1year

- Olympic Games call for real scale operational testing of all sport venues and of all new transport systems or traffic schemes directly affecting Olympic operations.
- This is one year in advance (some climatic conditions) for open air sports or about six month ahead.
- Testing is not only technical and logistical, but also of personals and the chain of command.
2.10 Complexity mitigated by “Knowledge Transfer”

- Observer programs of “live” similar events 4 years ahead is of tremendous added value when properly planned
- Vancouver 2010 Olympic Winter Games provided outmost precious experience on key Sochi 2014 organization issues
- EURO 2012 at Russia doorsteps could be also very helpful for many 2018 potential Host Cities

3. Consequences for Russia transport development perspectives

- Russian mega-event preparation learning process procured by the Sochi 2014 Winter Olympic Games is extremely valuable
- This is the task of TDOG “Transport Directorate for the Olympic Games” working with high level consultants both national and international
- Considerable road and rail infrastructure developments in Sochi // current main tasks: moving to transport operations // traffic management
FIFA 2018 World Cup preparation

• Next biggest transport preparation challenge (only 6 years to go) is FIFA 2018 World Cup.
• Russia won the bid, but the 2018 World Cup shall be delivered by a network of Cities most of them unprepared for such world event
• World Cup N°1 transport challenge is seamless transport integration at all four geographical scales. From international to last Stadium kilometre

FIFA 2018 World Cup preparation

• N°2 transport challenge: weakness of most proposed 2018 Host City airports except Moscow, Saint Petersburg and Ekaterinburg = huge airport development program
• N°3 transport challenge: all proposed Wcup Host Cities to develop 2018 “special transport plans” = huge City transport plan developments with priorities to global traffic management measures and TT-CCCC
WCup 2018 contrasted transport challenges

- *Most Russian Cities will have considerable WCup 2018 organizational challenges* due to weak airport / weak accommodation / lack of City international large scale hosting experience
- *For Moscow the challenge is almost reversed*:
  - strong airports / rather strong accommodation / experience of hosting international events but:
    - chaotic current traffic conditions
    - aggravated by 2011-2018 automobile growth!

4. Technologies for short term massive transport capacity improvements

- *The future of very large Stadium accessibility is certainly rail* (metro, suburban or national rail)
- Road congestion exert pressures to reduce Stadium spectator parking capacities except for very limited client groups
- For Stadia above 30’000 capacity, tramways are not sufficient
- New large Stadia to be served by high performance rail / stations at 500 to 1000m are optimal

City rail developments – what alternatives?

- If Stadium rail access not available, six years is an often impossible deadline for rail development project.
- Development of high performance bus systems (temporary or permanent) are an option
- Extensive area wide advanced traffic management is a “must” to cope with “extreme” traffic peak loads
- City wide car+truck traffic reduction (Beijing) of 20% or 40% might be an option to analyze

..do not “re-invent” the wheel…

- *Organizing the 2018 Football WCup is a world challenge of phenomenal proportions and complexity particularly in transport and logistics*
- Pragmatic experience of mega-events like EURO 2012, Sochi 2014 and WCup Brazil 2014 shall be used to the maximum not only for planning but for mega-event managers professional training!
Sochi 2014 Olympic Stadium as legacy for WCup 2018 and many other Int’nat events

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谢谢！
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