



APTA Light Rail Conference, Salt Lake City

French light rail – Relationships and Results

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Keolis

- Major public transport group based in France
- About 50000 people, of whom 33000 drivers
- About US\$ 5bn turnover
- Bus operations in US and Canada, one rail operation in US
- Owned 70% by French Railways, 30% by CDPQ
- Integrated , multi-modal networks
- Light Rail
 - 12 systems, 900 LRVs in operation in five countries
 - 5 networks being extended
 - 2 new networks under construction
- Dedicated subsidiaries for service planning, project implementation and technical expertise

Andy Wood



- Light rail management and engineering since 1994
- Worked for French operating and maintenance companies since 1999
- Technical Manager or General Manager of three light rail operations
- Traditional streetcar in Melbourne
- Gold Coast Light Rail tender and technical review
- Group Tramway Expert for Keolis, based in France

Content

- Relationships between operators and Local Authorities
- Some examples of results

Relationships - General

- Most networks are contracted by a Public Transport Authority to an operator. A few cities have public sector operation (Paris, Marseille, Toulouse, Nice) but this is unusual.
- Most contracts are re-tendered every 6-8 years by law. This has been the system for more than 30 years.
- The whole network is a single contract. No competition once a contract is awarded – a regulated environment
- Competition is strong, but changes of operator have not been frequent (churn historically <10%, some increase recently)
- Substantial reputational risk keeps operators (fairly) honest

Relationships – LRT Projects

- Light Rail projects are almost always an addition to an existing network, not a separate contract
- Patronage estimates are normally realistic, because of local financing (unlike UK). They are often exceeded
- Operator heavily involved in creation of specifications and designs, which are detailed – brings expertise, reduces risk for PTA and operator
- Many small construction packages let individually by the PTA, with complete design. Designed to maximise local opportunity and minimise risk
- Project delivery risks (price, timescale) taken by PTA.

Relationships – O&M

- Operational cost risk lies entirely with the operator
- Revenue risk lies with the operator, but if the PTA does not apply the proposed fares, a compensation mechanism applies
- Operator receives reimbursement for reduced fares for some groups (students, seniors, disabled...)
- Operator takes fare evasion risk. Tram is the worst case, but an integrated, multi-modal network helps
- Maintenance cost risk is with operator in the short term, with PTA in longer term on major maintenance, upgrade, renewal

Effects

- Operations and Maintenance costs and practices are reviewed regularly for the re-tendering, helping to drive out inefficiency
- Specification rules over price in French LRT projects, because the specification is detailed and decided first
- French operating groups have done well internationally because they have a good reference base in the home market, and are accustomed to tendering and to managing long-term relationships with public-sector clients

Examples

- Lyon – the developed product (and still developing)
- Dijon – first tram line

Lyon



...and the

...and LOTS of buses

Lyon

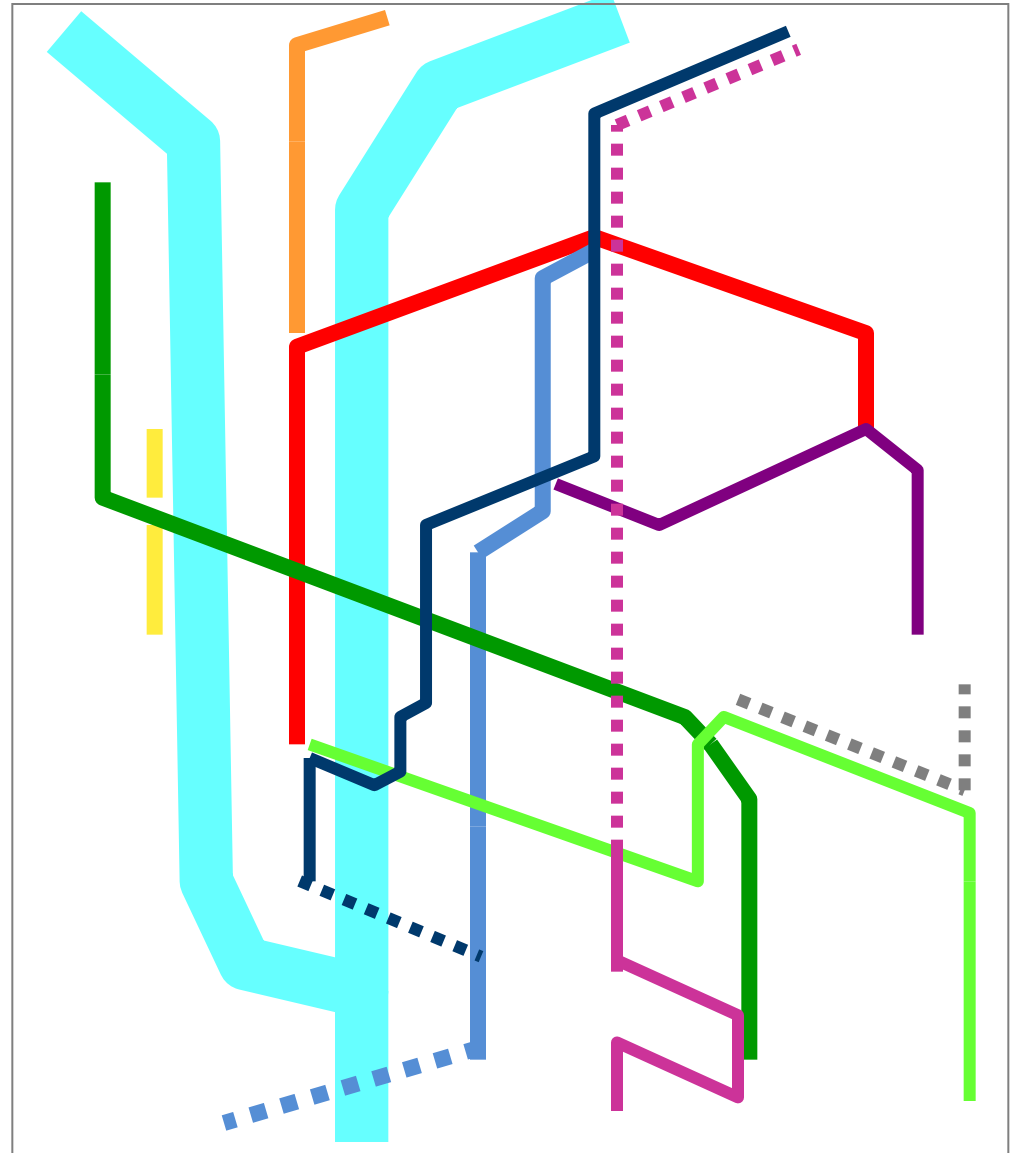
- 1977: launch metro C
- 1978: launch metro A & B
- 1981: extend metro B
- 1983: extend metro C
- 1986: renov. funicular B
- 1987: renov. funicular A
- 1991: launch metro D
- 1997: extend metro D
- 2000: extend metro B
- 2001: launch LRT 1 & 2
- 2003: extend LRT 2
- 2005: extend LRT 1
- 2006: launch LRT 3
- 2009: launch LRT 4



Lyon

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- 2005: extend LRT 1
- 2006: launch LRT 3
- 2009: launch LRT 4
- 2012: launch LRT T5
- 2013: extend LRT T4
- 2013: extend metro B
- 2014: extend LRT T1

Opens 17 November!

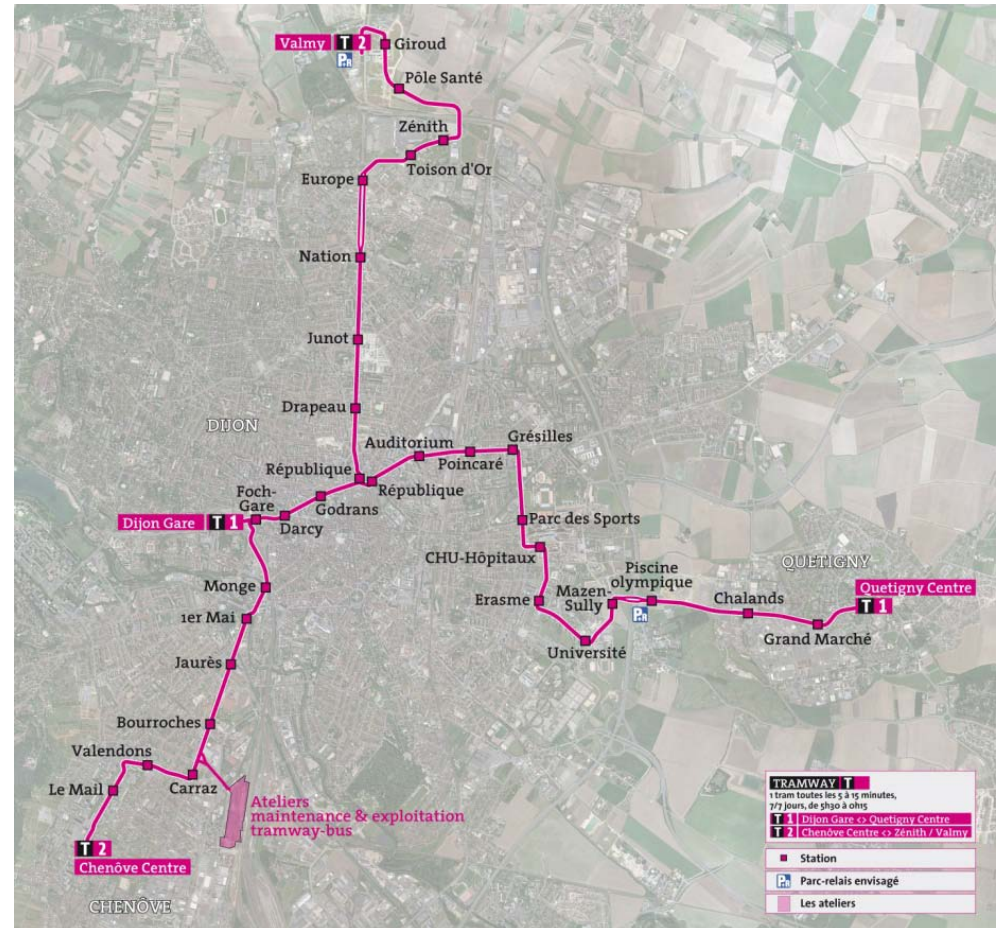


Lyon

- Over 400M boardings per year in a city of 1.6M people
- 64% of this is now on segregated rail modes (metro, tram, funicular) – up from 1% in 1977
- Despite bus routes changing to tram/metro, bus patronage is broadly stable – new routes and services are always being added
- About 4500 people working for the operator Keolis Lyon
- 50% operating cost coverage from fare revenue
- Fares €1.43 = US\$ 1.85 for 1 hour, €52.60 = US\$ 68.05 for a month. Employer pays half of season ticket cost (so my ticket costs me less than €1 per day)

Dijon

- About 250000 people
- Two lines, one opened September 2012 (early), one 8 December 2012
- Expecting 25% increase in network patronage
- Expecting 90000 trips/day (220000 on PT network)



Dijon

- Tram order shared with Brest – only paint and trim different. 53 trams, €2.05m = US\$2.65m each
- Project cost about €20m/km
- Innovative depot
- Driver training partly by simulator



Dijon



215 buses, 33 trams, 700 people

Dijon

- Old buildings demolished and 20000m³ concrete recycled on site, avoiding many truck movements
- Photovoltaic panels on the roof produce more power than is consumed – the excess is sold to the power company
- Waste heat from a large sewer under the site is used for heating via heat pumps – 60% saving in gas consumption
- Washing machines (bus and tram) recycle 85% of water, and make-up water is untreated rainwater not treated drinking water

Dijon

Simulator allows:

- Training in situations too dangerous to attempt in reality
- Training in situations which are rare in reality
- Measured performance and feedback
- Group observation
- Some familiarisation with a route before it is available





Thank you

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