Principal Considerations in Implementing ATN Applications

Austin Smith, Associate Director
Principal Considerations in Implementing ATN Applications

…primary observations

…applied to specific applications

…summary
Primary observations…
(levers)
PRT Core Attributes

- Automation
- Network-oriented
- Demand responsive
- Point-to-point
- Personal
- Dedicated Guideway
- Small Vehicles
- Passenger experience
- Low waiting times

ARUP
Principal drivers and levers in ‘making the case’

Perceptions, doubts and questions…

Technical

Economic

Customer
Principal technical levers…

- Safe
- Green
- Flexible and adaptable
- Segregated
- Configurable
- Scalable
- Known
Scale Comparison

PRT double track 4m structure

APM single track 4m structure

Travelator double belt with walkway 10m structure

Superstructure weight/m comparison
Principal customer levers…

Reliable and dependable
Predictable
Simple and enjoyable
Comfortable
Personal
Self-guided
Niche and innovative
Principal economic levers...

- Light weight and scale
- Easy installation and testing
- Improved land-use
- Reduced congestion
- Increased accessibility / proximity effects
- Comparatively low Capex and low Opex
- Sponsorship and partnerships
…perceptions, doubts and questions…

- Novel and immature technology
- Capacity and throughput
- Systems are not interchangeable
- Power requirements
- Approval and regulatory issues
- Cost and risk estimation
- Investment and financing
Principal levers summarised...

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Some applications...
Urban regeneration...
Specific Opportunities

- Use of space
- Proximity effects
- Land-use mix
- Cost efficiencies
- Improved access
- Differentiation
- Integration
- Last-mile connection
Specific Constraints

- Physical and practical
- Planning
- Lack of knowledge and experience
- Return on investment
- Revenue collection
- Capturing land value increase
- Well-being and urban vitality
Airports...
are all about connectivity…
Airports…all about connectivity…

- Car parks
- Resi or Trade zones
- Transport Hubs
- Hotels & Businesses
- JiT deliveries
- Aircraft
Airports… are all about connectivity…

- Car parks
- Transport Hubs
- Hotels & Businesses
- Transfers
- Baggage
- Gates & Aircraft
- Resi or Trade zones
- JiT deliveries
Specific Opportunities

- Making connections
- Simple ownership
- Time is highly valued
Specific Opportunities

- Integration
Specific Opportunities

• Making connections
• Simple ownership
• Time is highly valued
• Integration
• Check-in
• Wayfinding
Specific Constraints

- High point-to-point demand
- Security
- Revenue streams
- Link between investment and return
- Driverless benefit lower
- Integration into existing infrastructure
Campuses and business parks...
Specific Opportunities – the last mile connector…

- Space
- Dispersed demand
- Car-free environment
- Manage access
- Simpler integration
- Developer benefits
- Connection to transport hubs
- Linking buildings
Specific Constraints

- Peak demands
- Lower land cost reduces value benefit
- Revenue generation
Legacy parks...
Summary
### Principal levers summarised…

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Summary

• Multiplicity of levers
• These lend themselves more to certain applications
• Some principal levers are hard to monetise
• Recognise limitations imposed by risks but avoid over-weighting
• Principal outstanding questions don’t need to be blockers
• In the right setting PRT can step-change passenger experience
• Recognise the opportunities to rethink conventional solutions
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