

# **IT, Indian Railways & Public Private Partnerships**

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# Indian IT Industry

- India's great success story
- \$ 100 mn to \$ 48 bn under 2 decades
- 25% of forex earnings; 4% of GDP; 5 mn employed
- Will cross \$ 100 bn by 2011
- Set global benchmarks for quality
- Handles 66% of IT ; 45% of BPO offshored globally
- But engaged more globally than locally
- Indian Railways amongst earliest adopters
- But have not kept pace

# Intelligent use of IT can have major impact

- Enhancing Revenues
- Reducing costs
- Improving customer interface
- Improving efficiency through better MIS
- Better utilization of existing assets
- etc.

# IT dependent systems in Railways

Railways business units

Network/  
infrastructure

- Signaling systems
- Train control
- Maintenance planning

- Network capacity planning (track investments)
- Network configurations (origin and destination of trains)

Operating units  
(freight,  
passenger)

- Locomotive allocation
- Empty wagon management
- Crew rotation assignment
- Reservations system
- Commercial systems (order entry, tracking)
- Tracking and tracing
- Maintenance planning
- HR accounting, invoicing, etc.

- Schedule planning (train movement, timings)
- Demand forecasting
- Revenue management (tariff planning & special" prices)
- Rolling stock capacity planning

Operational systems

Decision support systems

Type of systems

# Relevance of IT systems in Railways

Railways business units

<p>Network/ infrastructure</p>	<ul style="list-style-type: none"> <li>- Network capacity planning (track investments)</li> <li>- Network configurations (origin and destination of trains)</li> </ul>
<p>Operating units (freight, passenger)</p>	<ul style="list-style-type: none"> <li>- Schedule planning (train movement timings)</li> <li>- Demand forecasting</li> <li>- Revenue management (tariff planning and "special" prices)</li> <li>- Rolling stock capacity planning</li> </ul>

Operational systems

Decision support systems

Type of systems

- Enable Railways to take strategic decisions on capacity investments
- Maximise returns on infrastructure and rolling stock investments
- Maximise utilisation of existing infrastructure capacity
- Assist in taking appropriate "Special" pricing decisions

# Relevance of IT systems in Railways

- Optimise utilisation of rolling stock
- Assist in managing crew and maintenance
- Assist in better customer service (through reservations, tracking, passenger information, etc.)
- Capture data for taking strategic decisions
- Increase efficiency in support functions (HR, finance, purchasing etc.)

		Network/ infrastructure
<ul style="list-style-type: none"> <li>– Locomotive allocation</li> <li>– Empty wagon management</li> <li>– Crew rotation assignment</li> <li>– Reservations system</li> <li>– Commercial systems (order entry, tracking)</li> <li>– Tracking and tracing</li> <li>– Maintenance planning</li> <li>– HR accounting, invoicing, etc.</li> </ul>		Operating units (freight, passenger)

Operational systems

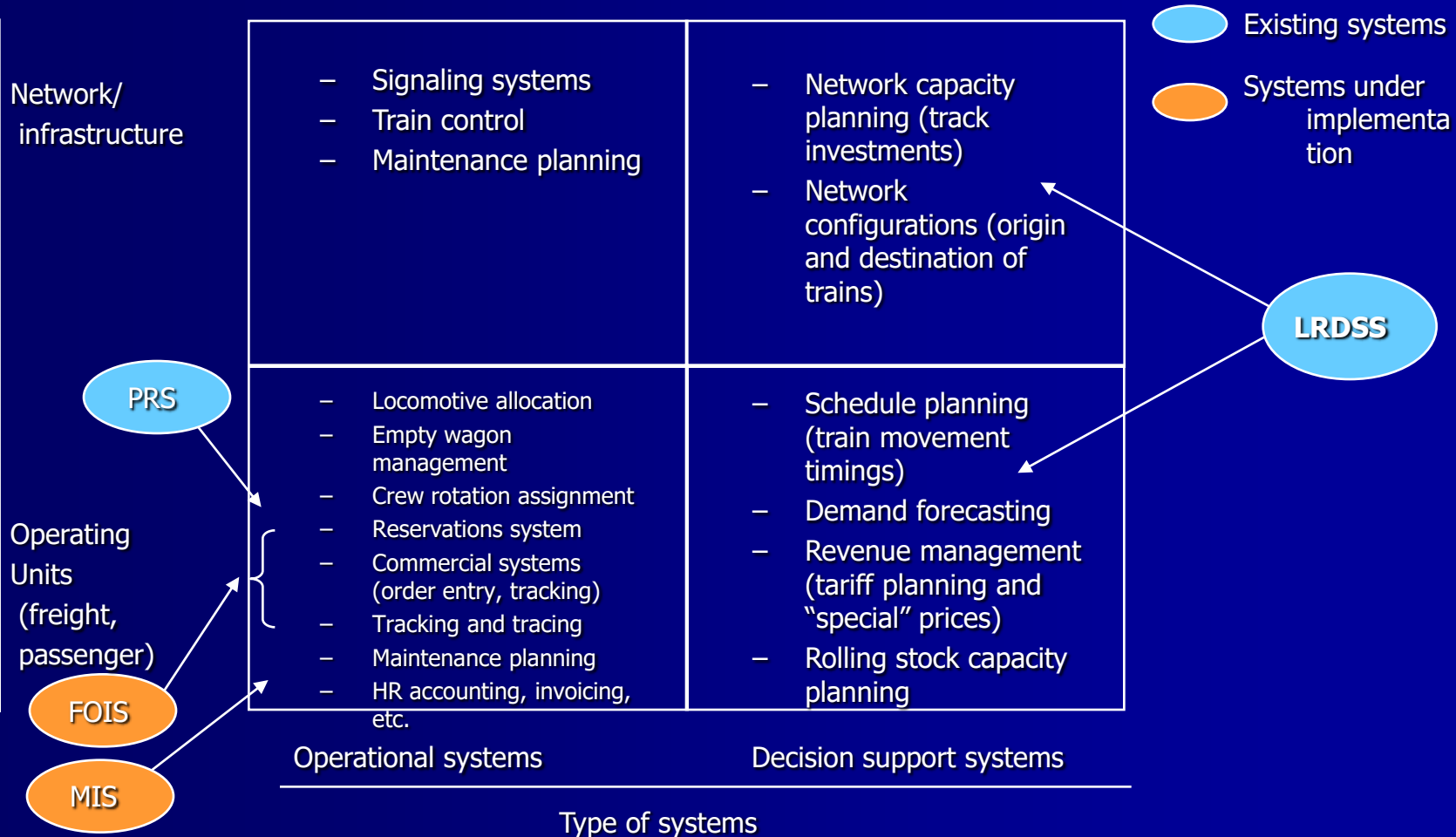
Decision  
Support  
systems

Type of systems

Railways business units

# IT systems at Indian Railways

Railways Business units



# Freight Revenue Enhancement

- Providing reliable / real time information to assist client production and inventory management cycles
  - Consignment arrival
  - Placing empty wagons at place of origin
- Yield management systems – demand based variable pricing
- Efficient scheduling of freight trains
- Creation of open freight exchange

# Passenger Revenue Enhancement

- Efficient reservation & ticketing system
- Wider distribution points
- Internet / outsourcing
- Revenue management system for flexible pricing
- Information / advice on schedules, fares, seat availability
- Efficient management of crew, on time departures

# Operational Cost Reduction

- Optimize scheduling of freight trains
- Will increase resource utilization & reduce operational costs
- Wagon & crew management system – most crucial - wagon moves 3 hrs/day!
- Parcel management system etc.

# Improved Decision Making

- Long range decision support system
  - Analyses demand
  - Takes optimal investment decisions for network, rolling stock, maintenance
  - Increases capital efficiency
  - Must be integrated with freight management/passenger reservation systems

# Public Private Partnerships

- Major source of investment
- Augments internal resources, market borrowing, budgetary support
- Critical for capacity / network expansion
- Best for non core operations

# Freight Exchange

- Innovative way to create market & introduce revenue management
- Works like commodity market
- Customers make buy offers for specific transportation services
  - Type of good
  - Date of transportation
  - Expected delivery time
  - Price
- Suppliers accept / reject bids online
- Maximizes revenues by allowing demand / capacity based pricing
- Exchange has value

# Internet based distribution system

- System owned by railways / travel agents / ticketing outlets
- Enhances customer service / access
  - Creates revenue enhancement opportunities
  - Railways need not invest in increasing infrastructure / staff
- Enterprise has value

# Public Private Partnership for Telecom

- Railways have huge telecom infrastructure
- But lack funds for up gradation / modernization
- Not core business but core need
- Private partner would bring investments / expertise
- Railways get significant revenues, better service

# Outsourcing Partnerships

- Railways can outsource entire IT function into a joint vehicle
- Private company would pay Railways to become a partner
- Joint vehicle would deliver Railways' needs more efficiently
- It would leverage its expertise to provide IT services to transportation companies worldwide
- Railways would have converted a cost line into a capital asset

# PPP opportunities

- Leveraging railways' real estate
- Budget hotels
- Modernization of stations with world class amenities
- Development of agro retail outlets / supply chains
- Outsourcing catering / parcel services (already saved Rs. 1,000 crores in losses)
- Wagon investment schemes and siding liberalization schemes have enhanced capacity
- Licenses for container trains will attract thousands of crores towards wagons and new terminals

**IT – Enables Value Creation**

**PPP – Unlocks Value**

**Thank You**

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