SMART CITY AHMEDABAD

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Ahmedabad ITMS- AFCS & CCPS in World Economic Forum Report for Data Driven Cities

WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

Global Agenda

Data Driven Cities
20 Stories of Innovation

Prepared by the Global Future Council on Cities and Urbanization

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7. Understanding city economics by analysing bank data on spending

What
Researchers at the MIT Senseable City Lab used bank data to model, visualize and predict spending patterns in Spanish cities and regions, including indicators on the amount of spending, type of spending, type of individual and individual mobility in a special project called Urban Lens. An app allows users to compare the distinctive signature of each region and aggregate data across regions.

Why
Economic models have been failing to adequately predict and explain macroeconomic trends. This project closes the gap between models of micro behaviours and macro phenomena to elucidate how bigger economic patterns can be understood by utilizing data about individual economic transactions.

How
Anonymized data on millions of financial transactions is provided by BBVA, which has ubiquitous banking infrastructure in Spain. The model was validated by comparing it with official socioeconomic indices at the provincial level: the correlation proved to be strong.

Potential
By improving understanding of microeconomic patterns at city level, and enabling comparisons across cities and across time, Urban Lens can be used to inform urban planning, policy-making and business decisions.

Useful links
http://senseable.mit.edu/urban-lens/

8. A seamless public transport experience – paying by card or face recognition

What
The Indian city of Ahmedabad introduced an automatic fare collection system and integrated transit management system to offer seamless journey planning and payments– including informal public transit, such as shared cabs and auto-rickshaws. Yinchuan in China, meanwhile, has deployed a facial recognition system to automate payments on local city buses – the cardless transactions being even faster and simpler.

Why
Integrating the different parts of a city's public transport network is more convenient for customers, allowing them to plan journeys better; in particular, improving "last mile" connectivity by including informal public transport encourages greater use of public transport overall. Generating real-time data across the network can enable improvements in operational efficiency and utilization of assets.

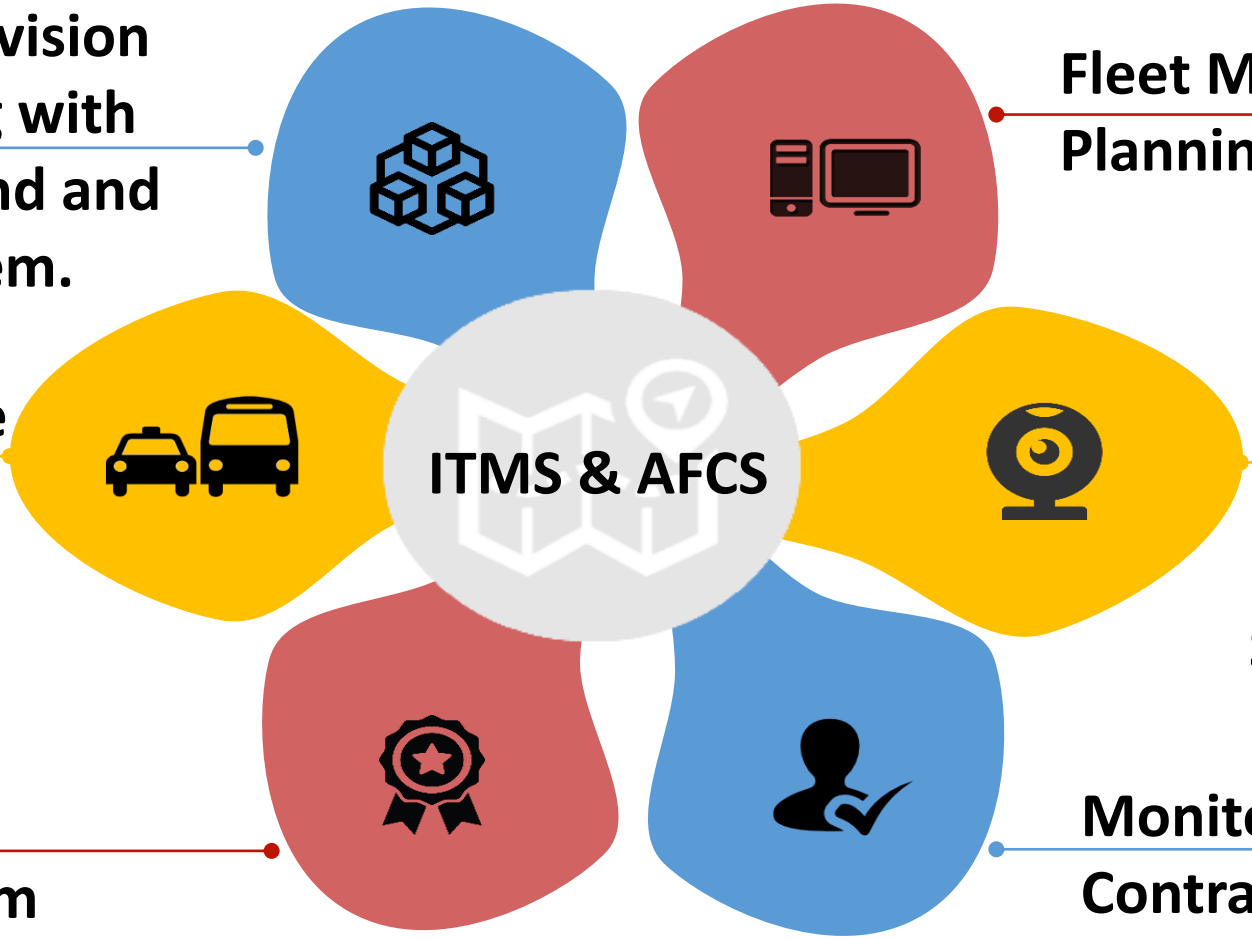
How
Ahmedabad's automated payment system uses smart cards to gather users' transit data, which enables automated, cashless transactions and real-time monitoring of the fleet of public transport vehicles, while Yinchuan's facial recognition software links passengers' faces to their bank accounts and collects fares directly from there.

Potential
Offering a seamless experience across mobility systems, and giving both customers and network operators the information they need to improve planning and scheduling, has the potential to decongest public transport, allowing the city to maximize the use of existing transit capacities rather than investing in new urban mobility infrastructure.

Scope

Real time supervision and monitoring with Central Command and Control System.

Fleet Management using Vehicle Planning and Scheduling (VPSD).



Automated Vehicle Location System (AVLS).

Faster and efficient management of incidents by Incident Command System (ICS).

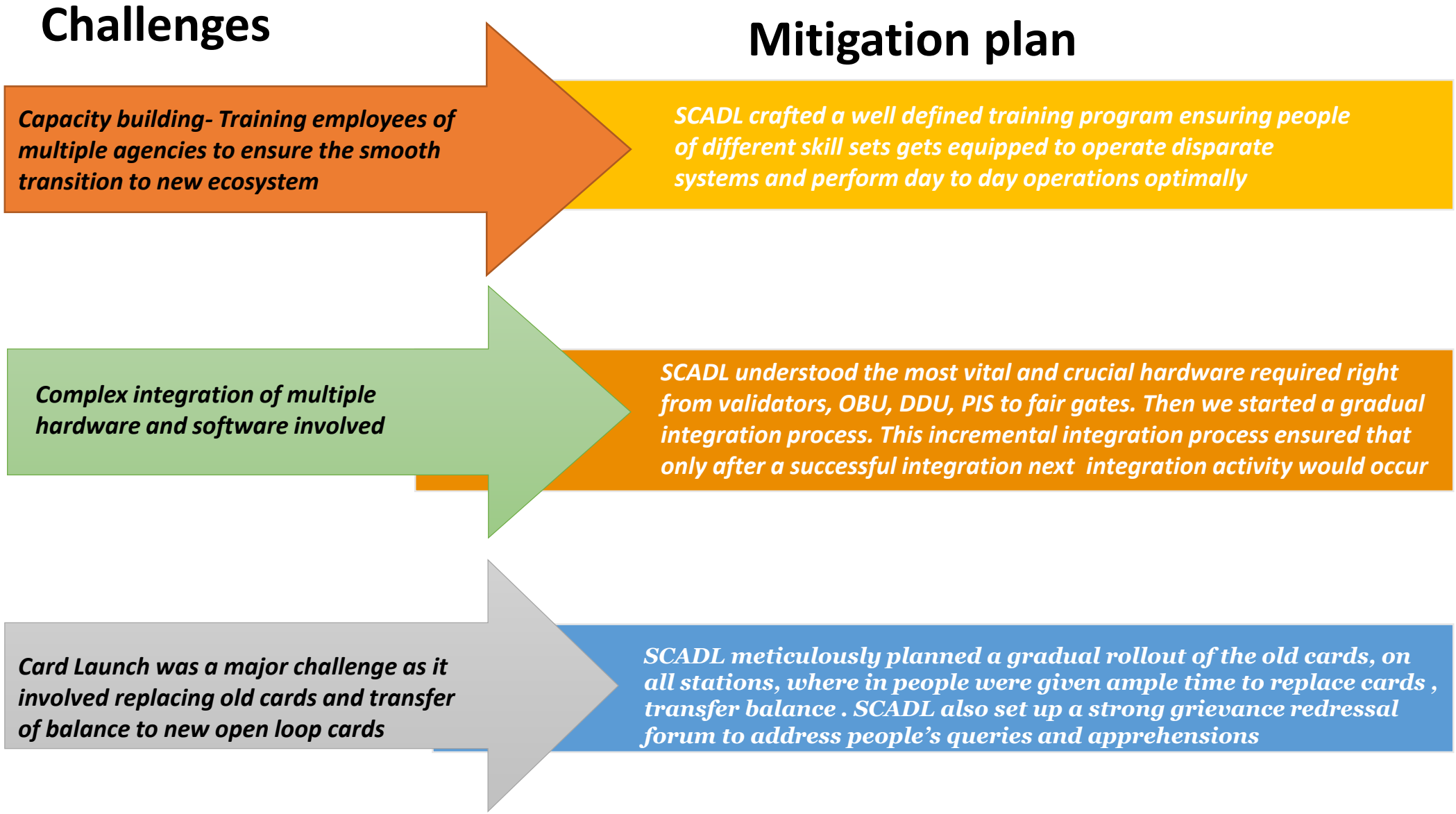
Automated Fare Collection System (AFCS).

Monitoring driver behavior. Contract management through KPIs.

Implementation framework of ITMS-AFCS

Component	Details	Vendor/OEMs
Optical fibre network	182 KMs Connects all 158 BRTS stations with Command and Control Center.	**Sterlite.** Commissioned in March 2017.
ITMS	Cameras	Integration of 158 Stations & 230 Buses of BRTS along with 837 buses & 2900 Stations of AMTS. **(n)Code-NEC**
	Electronic Ticketing Machines	
	Validators and Turnstiles	
	Passenger Information Systems	
	GPS	
	Software's	
Janmitra	Open loop Smart card system for transit and non-transit services.	**ICICI Bank** Major OEMs: 1. Paycraft – Mumbai 2. Verifone – Bangalore 3. NEC-Japan 4. Amco – Greece.

Challenges and Mitigation Plan



Challenges and Mitigation Plan

Challenges	Mitigation plan
Dealing with 15 different OEM's from diverse geographies	***We established a war room approach, where in OEM's from across the globe be it Japan, Greece, many states of India converged and ensured successful implementation***
Brownfield project- Implementing new hardware, software which will replace existing functional elements	***The project implementation was impeccably planned which ensured gradual phasing out of already existing infrastructure, ensuring forward and backward integration. All this was done without hampering on going operations***
For the first time in the country ,understanding and procuring major certifications and compliances	***Formed a team to understand the required certifications and coordinate with NPCI to secure necessary certifications. In record time span, we have achieved all deliverables of Certification with the help of NPCI team***

IMPACTS

Business Intelligence

AVLS

Components	Outcome
Automatic Vehicle Locating System (AVLS)	Schedule Adherence at real time Analysis of Driver behaviour Control of Bus Speed monitoring Control of Station Skipping Avoiding bus bunching Idle timing Real time communication between Driver and Control Room
Automatic Fare Collection System (AFCS)	Reduction in ticket issuance time Automatic and effective reconciliation Real time passenger data Origin – Destination Data Analysis to change bus schedule
CCTV	Passenger Safety at Station and in bus. Station Supervision Monitoring of Traffic at Junctions
Passenger Information System	Bus Information Display for the ease of Passenger Advertisement revenue Emergency Announcement

Photographs