Government of India
Ministry of Housing and Urban Affairs

National Urban Conference on the Communities of Practice under SUSDC II project

Digital Solutions in Urban Governance

16 Nov 2023

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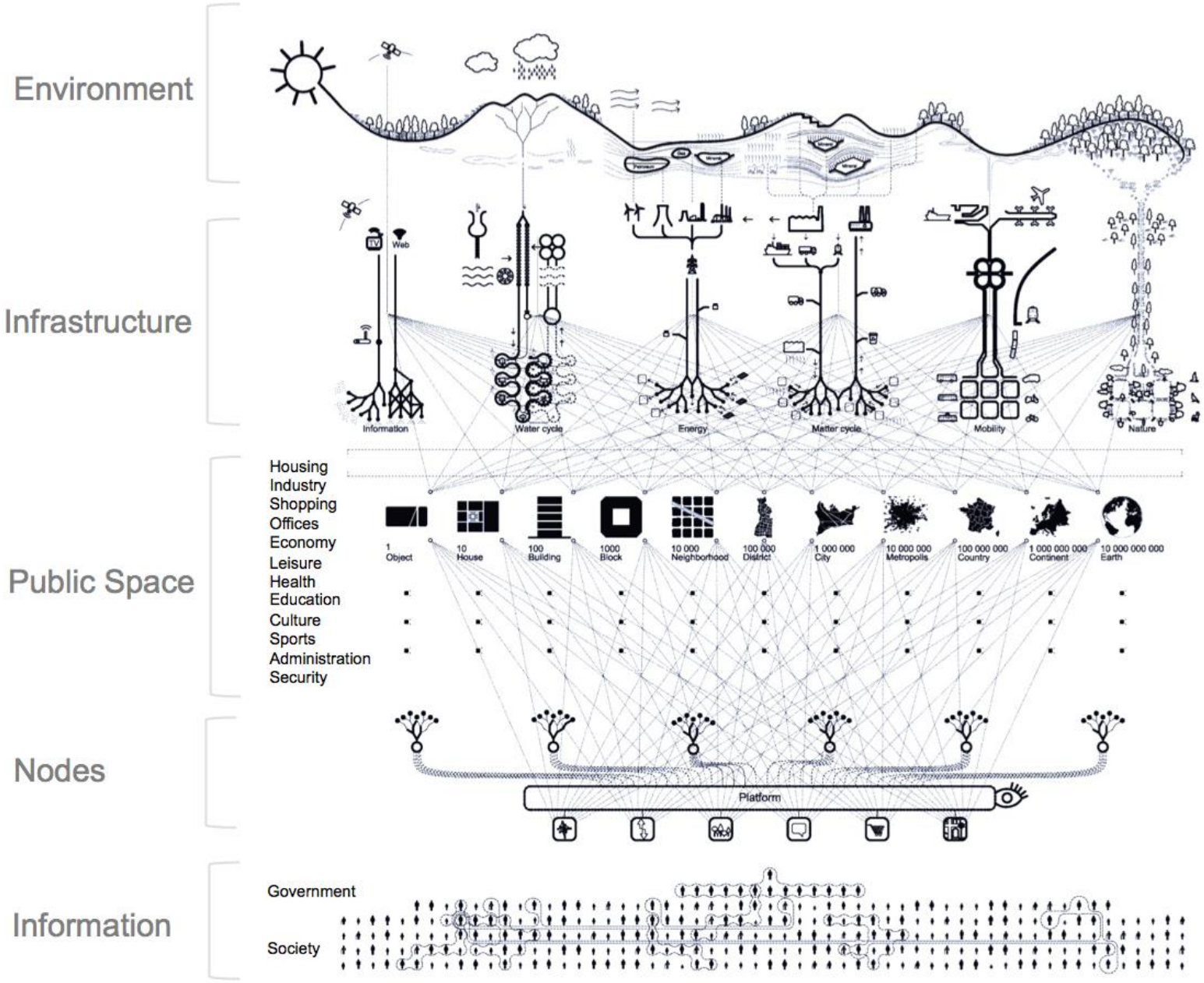
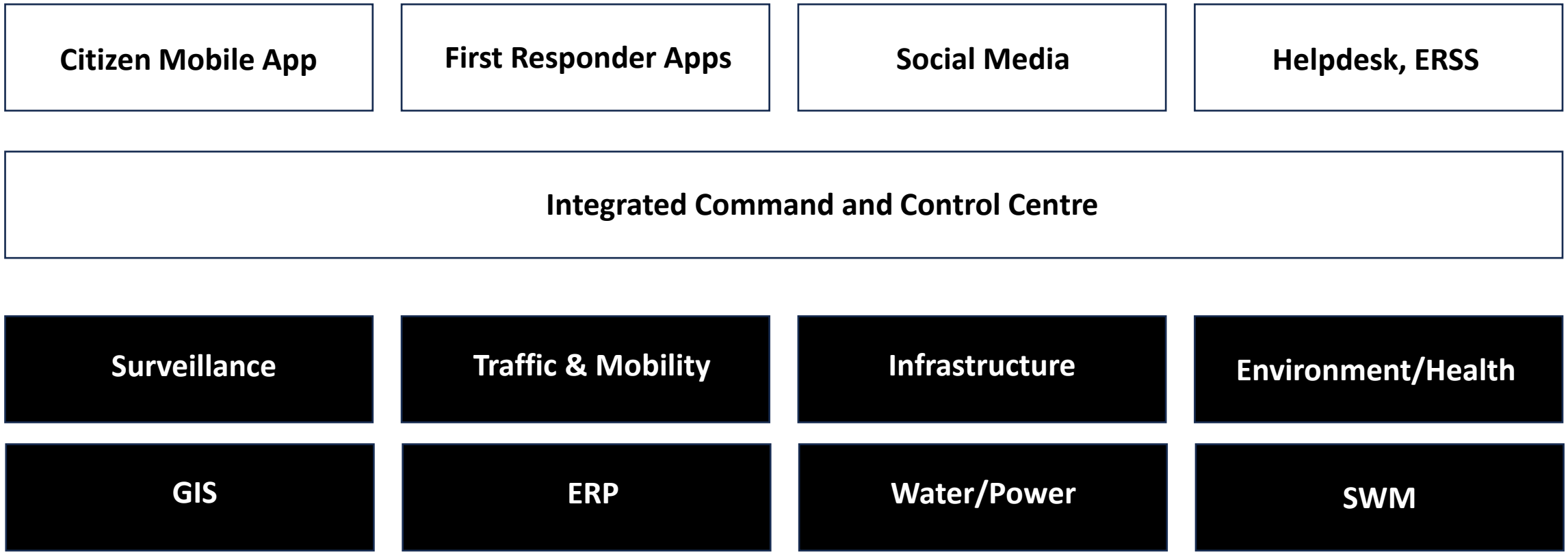
Digital and Urban ecosystem



Digital Solutions for Urban Governance

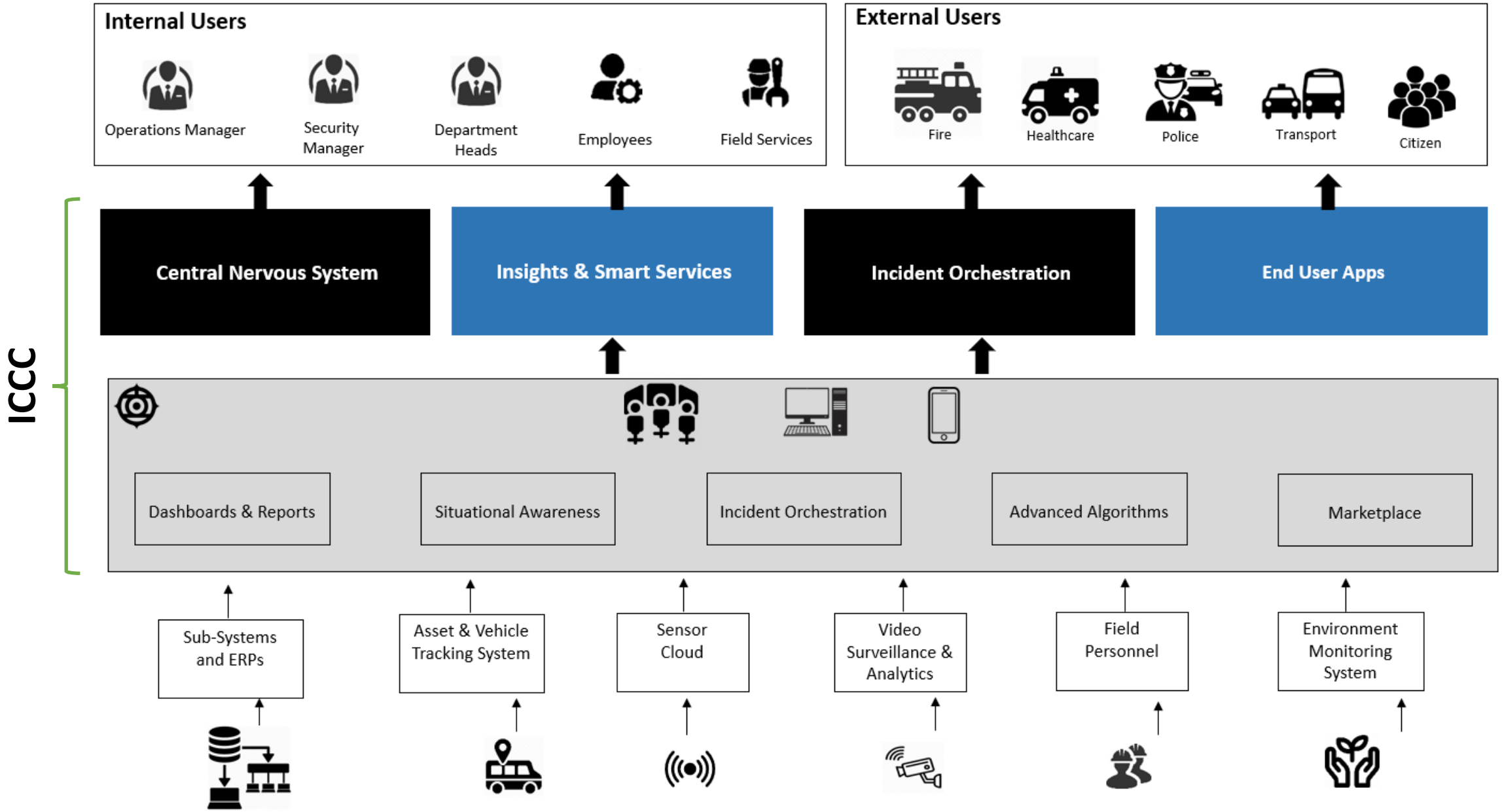
The purpose behind any successful digital solution is to better lives rather than implementing the newest technology



AI Solutions

Public Safety	Traffic	Pollution	SWM
Parking	Social Media Analysis	Cyber Security	Asset maintenance
Early Warning systems	Power and Water consumption	Satellite imagery	Urban planning
Urban mobility	Crowd management	Generative AI	Digital Twin

ICCC Architecture



Benefits of Integrated Digital Solutions

IT/OT/IOT Domains/Departments/Applications

Smart Parking, Light, Environment	Citizen, Tourist Mobile App
ITMS (ATCS, RLVD, SVD, ANPR, ATCC)	ERSS (Dial 100/112)
Smart Kiosks, Water Monitoring	Public Bike Sharing, Transport
Smart Pole, CCTV, Wi-Fi,	e-Governance, e-Health
Electrical, Water/ Sewerage SCADA	ECB, PA Systems, VMD

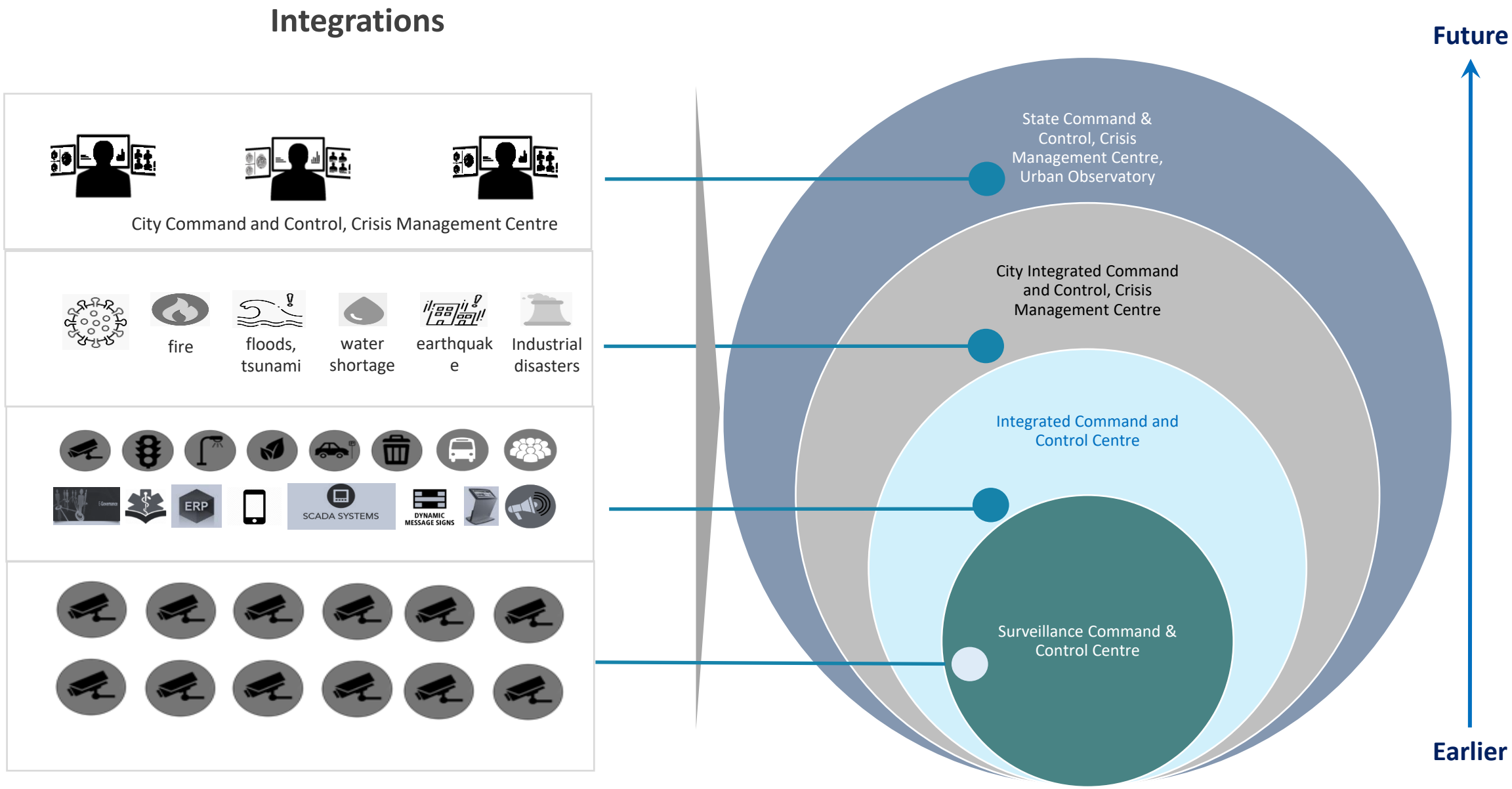
ICCC

- Real-time monitoring
- Situational Awareness
- Incident Management
- AI-KPI-Decisions
- Security

Envisaged Benefits

Better delivery of Citizen Services	Urban mobility, Traffic decongestion
Increased Operational Efficiency	Protection of Heritage
Safety & Security Improvement	Affordable housing led Urban Poverty Alleviation
Citizen Services Accountability	Tourism led Livelihood Opportunities
Preservation of Unique City Features	Disaster Mgmt, Emergency Response

Evolution of Digital Solutions



Urban Observatory

- Monitor various urban services parameters across the city, state and country
- Collect various data from the smart programs to eventually create a Livability Index for each city and at a national level
- Create a national open data platform to enable urban innovation
- Create an eco-system of private and public entities that will help transform urban services delivery

Outcomes

- Determining the accessibility to Drinking water
- Mapping the need for Educational Institutions
- Locate Biodiversity Hotspots
- Identification of unsafe places for women in the country
- Aerosol Optical Depth (AOD) in country. High level of aerosols in the atmosphere leads to severe droughts and flooding conditions
- Most polluted cities, states in country and death rate ‘coz of pollution
- Most Liveable Cities based on Institutional, Socio-Economic and Physical (Mobility, Water, SWM etc.,) parameters
- State that could have Water Stress in future
- Infant Mortality reduction trends
- Analysis on Urban Sprawl, Open Spaces supply and demand, City sustainability levels monitoring

City Use cases (1/2)

- City has a target plan to reduce their average journey times by 15% during peak hours and increase south bound speeds by 50% during morning peaks.
- 20-40% reduction in traffic accidents
- Reduced or consistent NO2 emissions over next 5 to 10 years
- Achievements:
  - There has been journey time improvement of 27% in one of the Corridor
  - 30%, 18% Improvement in two other Corridors

- Traffic fine collection through detection of 14,774 traffic rules violators amounting to Rs 99.43 lakh (US$ 0.13 million) in fines in Year 1
- Rs. 93 lakh (US$ 0.12 million) through e-challans in Year 2.
- Helmet violations accounted for Rs. 51 lakh (US$ 0.07 million) worth of fines collected

- By digitizing 1700 waste bins at 24 wards, digital solution has helped reduce the incidence of overflowing bins and the resultant illegal dumping, making city cleaner than before.
- Optimized pick-up trips by waste collection trucks, saving on resource and fuel cost, as well as reduce carbon emissions due to lesser number of trips.

- City replaced traditional garbage bins with 40 underground sensor bins each with a capacity of 1100 litres
- Number of overflowing bin alerts have come down from 30k to 14k from indicating waste is getting picked up from the bins more efficiently before they are overflowing through 10% increase in Waste vehicular movement

City Use cases (2/2)

- Severe smog during the winter months due to 23 million tons of paddy stubble being burnt by farmers in neighboring states to clear their land for growing wheat creating health issues for citizens and visibility for motorists
- Pollution monitoring helped identify parts of the city which were most polluted and the cause of pollution other than crop burning [ex: Industrial pollution, vehicle density] to devise environment protection policies and monitor the effect of implementing them

- City was mandated to follow the orders of the National Green Tribunal (NGT) to control the levels of pollutants being discharged into a river through a drain within its jurisdiction, as part of the river revitalization program. The levels of the effluents were to be measured at their discharge points from the Sewage Treatment Plants(STPs).
- City was able to bring TSS, pH, COD, BOD under NGT permissible limits over a period of 9 months – a tangible improvement of 40-45%

- City had a not so good citizen sentiment regarding public safety based on social media posts. City has taken measures to solve the issues
- From June 2020 to March 2021, there has been a decrease of negative sentiment from 60% to 10% on topics such as Murder and Riots. Faster clearances of High Court cases Involving murder, and monetary relief to victims of riots contributed to the shift in sentiment

- The city council had officially earmarked 8 areas in the city predominantly occupied by the less privileged as opportunity zones to attract more investments to develop them.
- These areas suffered from a digital divide with students unable to access the internet, resulting in lower grades and limited opportunities for other residents for growth
- Centrally managed Smart Street Lights, Wi-Fi Access points, Revenue from targeted and location-based Ads helped city to get $40 million worth of investments

Thank You