Confederation of Indian Industry

Making Haryana smart

pwc

Foreword

Haryana has transformed itself from a state only known for its agriculture production to a state known for well-rounded development. The state's growth and development trajectory has been progressive since its formation as an independent state. It has set the example for planned economic development and has emerged as one of the leading Indian states in terms of per capita income.

The state has achieved significant milestones in its endeavour as a hub for industrial products evident from the fact that Haryana today is a major contributor of passenger cars, motorcycles, tractors, bicycles, and scientific instruments.

However, the key issue now is to sustain this momentum. With growth, urbanisation has also increased manifold in Haryana. As an important contributor to the nation's economic development, urbanisation has a direct correlation with GDP growth as increase in population density brings along avenues for economic activities. People move from rural to urban sectors to be a part of this economic transformation and look forward to employment opportunities and a better quality of life.

Although urbanisation has been an instrument of economic, social and political progress, it has led to serious socio–economic problems. The urban share in Haryana's total population has increased to 35% in the last few years and is projected to grow at an accelerated rate. Panipat, Rohtak, Gurgaon, Rewari, Faridabad and Sonipat have seen exponential growth in urban population and the existing physical, urban and social infrastructure of these cities need an overhaul in order to meet and sustain requirements.

Urbanisation today is a national–level concern, the Indian government has realised this and proactive steps are being taken to transform existing cities for balanced growth. Strategies and implementation plans are being developed to leverage the smart urbanisation concept that entails the utilisation of technology, existing and planned infrastructure investments to provide a higher quality of living to residents, a positive investment climate for businesses and allowing the maximisation of resource utilisation and transparency for governments. Smart cities are expected to sustain rapid urbanisation and ever-increasing citizen requirements and the demands of the advanced 21st century societies.

In our report, we have indicated a roadmap to transform Haryana's cities into smart cities in order to sustain urbanisation. We believe this report will provide the right impetus to policymakers and stimulate progressive debate on sustaining rapid urbanisation across Haryana.

Our report is driven by the belief that Haryana can build shared prosperity for its 2.53 crore citizens by transforming the way the economy creates value.
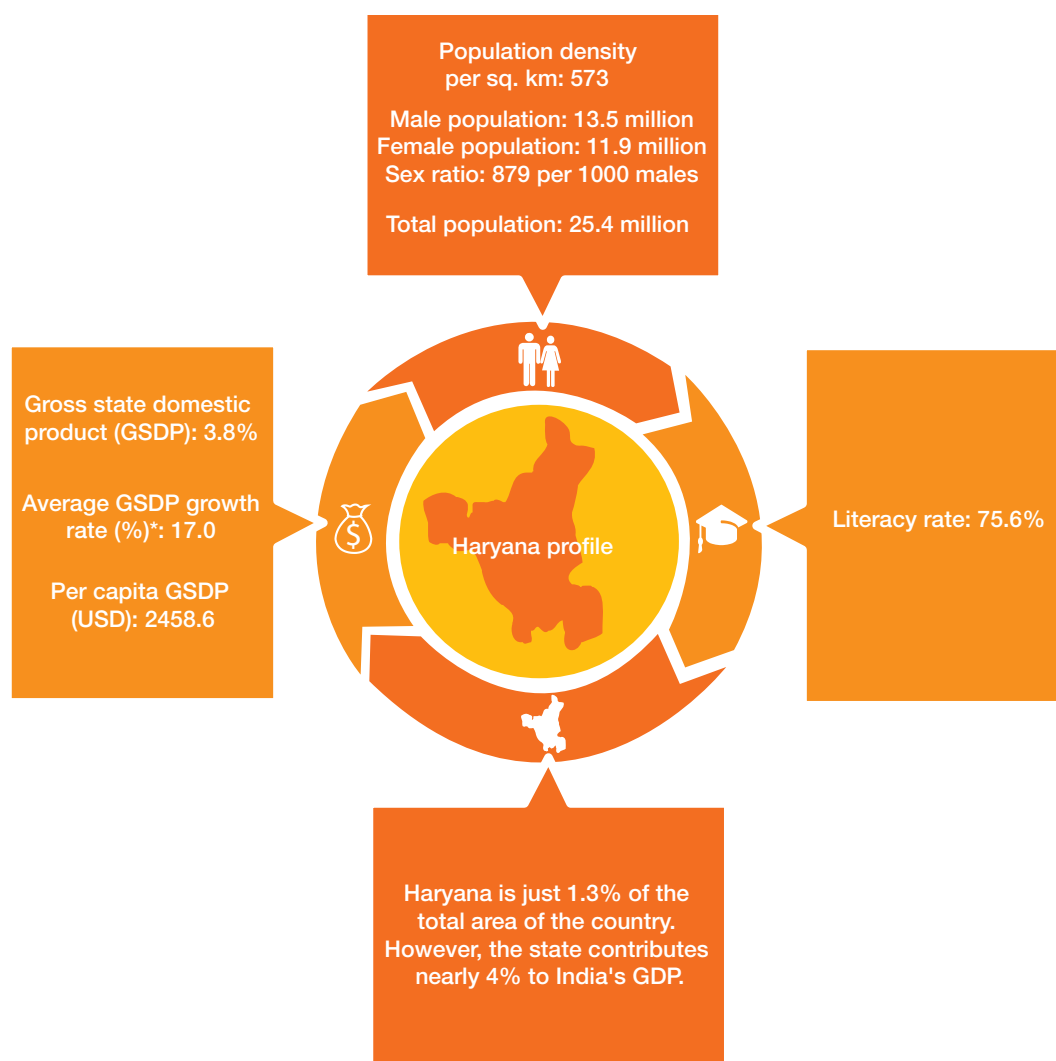
Neel Ratan
Leader
Government and Public Services, PwC India

Rattan Kapur
Chairman
CII Haryana State Council

Haryana snapshot

Population density
per sq. km: 573

Male population: 13.5 million
Female population: 11.9 million
Sex ratio: 879 per 1000 males

Total population: 25.4 million

Gross state domestic
product (GSDP): 3.8%

Average GSDP growth
rate (%)*: 17.0

Per capita GSDP
(USD): 2458.6

Haryana profile

Literacy rate: 75.6%

Haryana is just 1.3% of the
total area of the country.
However, the state contributes
nearly 4% to India's GDP.

Administrative divisions

The state is divided into four divisions for administrative
purposes-Ambala, Rohtak, Gurgaon and Hisar. These
divisions have a total 21 districts.

Divisions	Districts
Ambala	Ambala, Kaithal, Kurukshetra, Panchkula, YamunaNagar
Gurgaon	Faridabad, Palwal, Gurgaon, Mahendragarh, Mewat, Rewari
Hisar	Bhiwani, Fatehabad, Jind, Hisar, Sirsa
Rohtak	Jhajjar, Karnal, Panipat, Rohtak, Sonipat

State infrastructure

Hundred per cent rural electrification since 1970. Three thermal power plants and one hydel.

A total of 164 hospitals and health centres, 466 primary health centres, 2,630 sub-centres and 469 delivery huts.

School available within distance of 1.03 kms of each village.

The tele-density of Haryana was 80.2% as of May 2014.

IIM Rohtak, plans to open NLU, IIT and an education city in Kundli.

Six industrial model townships, various industrial clusters for footwear and accessories, agricultural, scientific goods, handloom, hosiery and textile goods, heavy engineering and machining.

Source: Economic Survey of Haryana 2013-14

Key developmental projects

The state has taken several initiatives for developing industrial infrastructure.

- Plans to develop sector-specific theme parks and sub-cities along the Kundli-Manesar-Palwal (KMP) expressway
- Delhi-Mumbai Industrial Corridor (DMIC) that will cover 14 districts of Haryana
- Set up an international cargo airport at Bhaini Maharajpur and Bhaini Bhairon villages

Source: Economic Survey of Haryana 2013-14

Policy support

Industrial and Investment Policy 2011

IT policy 2000

Haryana Special Economic Zone Amendment Act, 2010
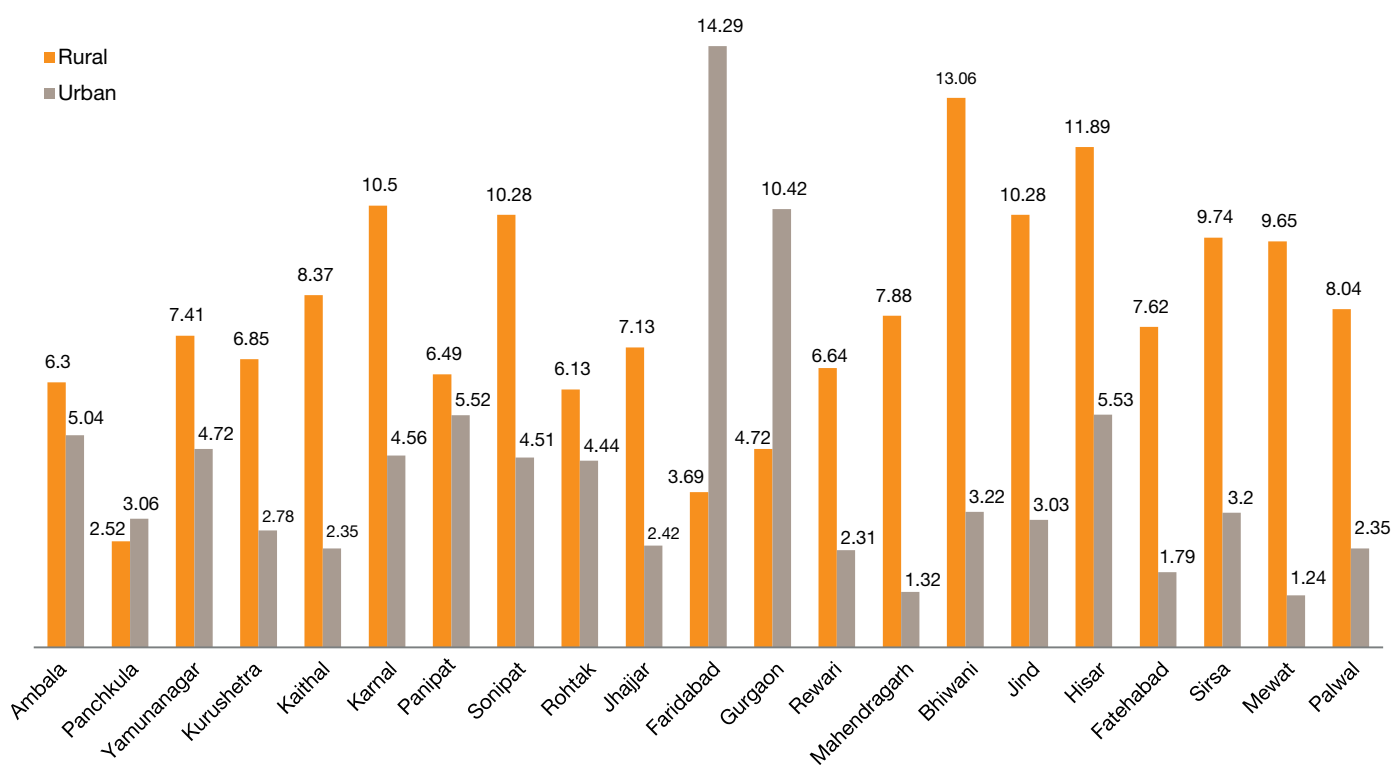
Public Private Partnership Policy

Land Pooling Scheme

Labour Policy

Rehabilitation and Resettlement Policy

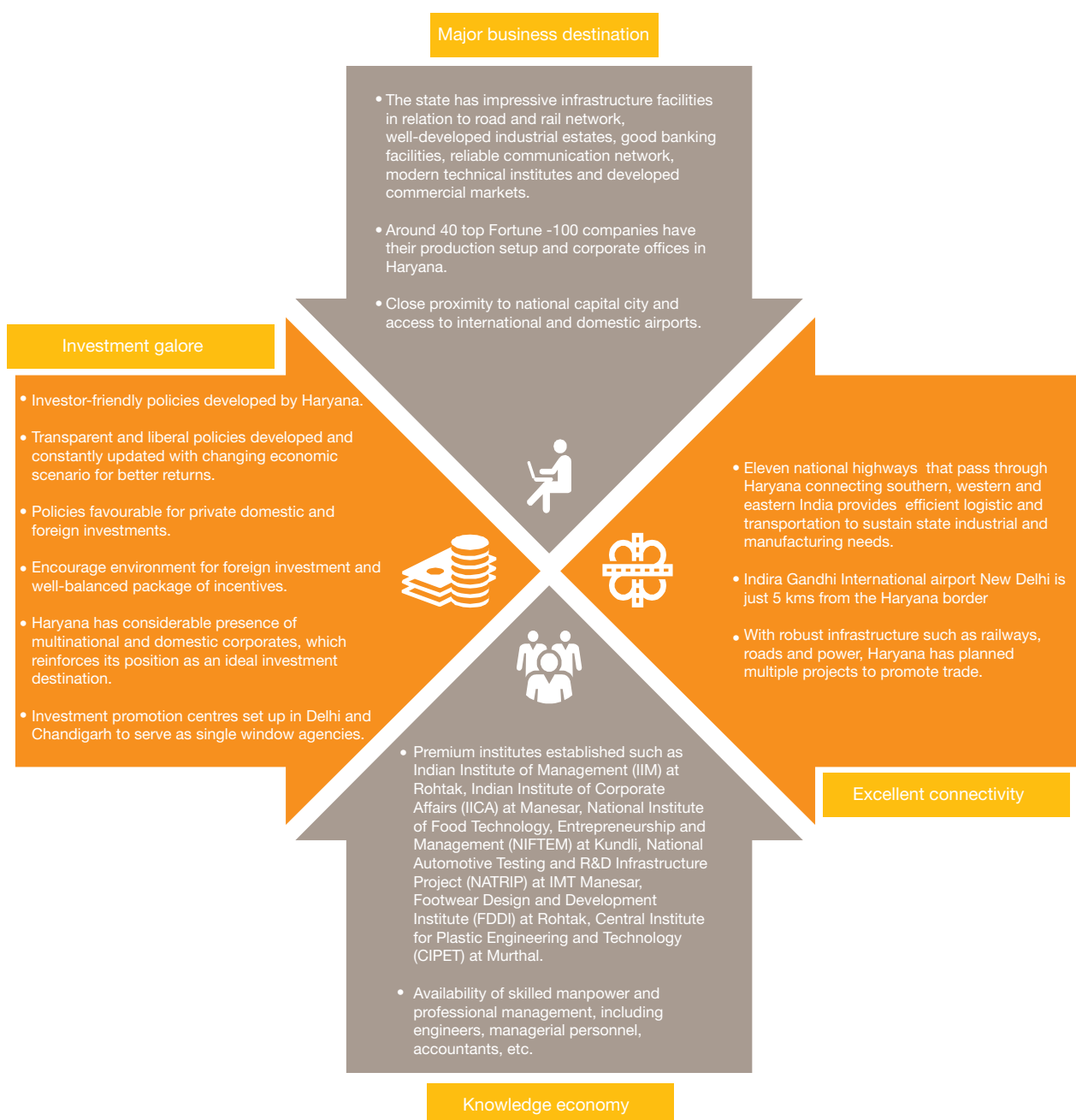*Source: Economic Survey of Haryana 2013-14*

Urban and rural population: District wise (in lakh)

Legend: Rural (orange), Urban (grey)

District	Rural	Urban
Ambala	6.3	5.04
Panchkula	2.52	3.06
Yamunanagar	7.41	4.72
Kurushetra	6.85	2.78
Kaithal	8.37	2.35
Karnal	10.5	4.56
Panipat	6.49	5.52
Sonipat	10.28	4.51
Rohtak	6.13	4.44
Jhajjar	7.13	2.42
Faridabad	3.69	14.29
Gurgaon	4.72	10.42
Rewari	6.64	2.31
Mahendragarh	7.88	1.32
Bhiwani	13.06	3.22
Jind	10.28	3.03
Hisar	11.89	5.53
Fatehabad	7.62	1.79
Sirsa	9.74	3.2
Mewat	9.65	1.24
Palwal	8.04	2.35

As per 2011 Census

The Haryana advantage

- The state has impressive infrastructure facilities in relation to road and rail network, well-developed industrial estates, good banking facilities, reliable communication network, modern technical institutes and developed commercial markets.

- Around 40 top Fortune -100 companies have their production setup and corporate offices in Haryana.

- Close proximity to national capital city and access to international and domestic airports.

Investment galore

- Investor-friendly policies developed by Haryana.

- Transparent and liberal policies developed and constantly updated with changing economic scenario for better returns.

- Policies favourable for private domestic and foreign investments.

- Encourage environment for foreign investment and well-balanced package of incentives.

- Haryana has considerable presence of multinational and domestic corporates, which reinforces its position as an ideal investment destination.

- Investment promotion centres set up in Delhi and Chandigarh to serve as single window agencies.

Excellent connectivity

- Eleven national highways that pass through Haryana connecting southern, western and eastern India provides efficient logistic and transportation to sustain state industrial and manufacturing needs.

- Indira Gandhi International airport New Delhi is just 5 kms from the Haryana border

- With robust infrastructure such as railways, roads and power, Haryana has planned multiple projects to promote trade.

Knowledge economy

- Premium institutes established such as Indian Institute of Management (IIM) at Rohtak, Indian Institute of Corporate Affairs (IICA) at Manesar, National Institute of Food Technology, Entrepreneurship and Management (NIFTEM) at Kundli, National Automotive Testing and R&D Infrastructure Project (NATRIP) at IMT Manesar, Footwear Design and Development Institute (FDDI) at Rohtak, Central Institute for Plastic Engineering and Technology (CIPET) at Murthal.

- Availability of skilled manpower and professional management, including engineers, managerial personnel, accountants, etc.

Source: Economic Survey of Haryana 2013-14

Haryana's key achievements

Urban infrastructure

- Haryana has built a vast integrated road network of 27000 kms, including state and national highway to support the state's manufacturing and industrial sector.
- In last five years, Haryana has doubled its power generation capacity and the total installed capacity is more than 9500MW.
- Metro connectivity in Faridabad and Gurgaon.
- Gurgaon rapid metro started in 2014.
- Haryana has leveraged the national flagship programmes for development of its water distribution and drainage network, sewage and solid waste, road transportation and housing projects for weaker section.
- Urban areas managed by 78 ULB's in the state of Haryana consisting of nine municipal corporations, 14 municipal councils and 55 municipal committees.
- Bus network of more than 4000 state government buses.

- Industrial production has almost doubled over the last decade and industrial production index scores above all India's average.
- More than 1,600 large and medium industries and around 90,000 MSME units.
- Haryana manufacturing sector has achieved a higher growth rate than the national level manufacturing growth rate.
- Haryana currently produces 75% of passenger cars, 60% of tractors, 70% of motorcycles, 25% of bicycles and 50% of refrigerators manufactured in India.

Industrial and manufacturing centre

Social infrastructure

- Haryana's educational sector has achieved unprecedented growth and has more than 25000 primary and secondary schools. In technical education, Haryana offers around 1.5 lakh seats.
- Health services are provided to all categories, including infants, children, adolescents, mothers, elderly through a network of 56 hospitals, 109 community health centres, 467 primary health centres, 2630 sub-centres, seven trauma centres, 90 urban RCH centres and 473 delivery huts.
- In the area of women empowerment, established the State Mission for Empowerment of Women with the objective of empowering women socially, economically and educationally as effective implementation of various social laws concerning women.
- In labour welfare, the rates of minimum wages for unskilled workers have been fixed at 5,341 INR per month for monthly rated workers and 205 INR per day for daily rated workers.
- In the area of employment support, various schemes are provisioned to tackle unemployment concerns and support is provided through unemployment allowance to educated unemployed youth, private placement consultancy and recruitment service centres, overseas employment bureau, etc.

- Emergence of Gurgaon as the third largest hub of IT industry after Bangalore and Hyderabad.
- Haryana accounts for 6.8% of the employment in the IT sector throughout the country.
- Gurgaon has emerged as the BPO capital of India and accounts for more than 11% employment in the BPO sector throughout the country.
- In 2011-12, software exports from Haryana are estimated at 6% of total national exports. Haryana is the third-leading exporter of software and a preferred destination for IT/ITeS sectors.

Leading hub for IT

Robust economic growth

- Haryana has registered an excellent average annual growth rate of 8.8% during the period of last eight years (2005-06 to 2012-13), higher than the 8.0% growth rate of the Indian economy.
- GDP growth of Haryana during 2012-13 was recorded as 6.5% , higher than the growth of 4.5% recorded by the Indian economy.
- The state continues to maintain its lead in the country in terms of rate of implementation of the pledged investment.

Source: Economic Survey of Haryana 2013-14

Urbanisation following the global mega trend
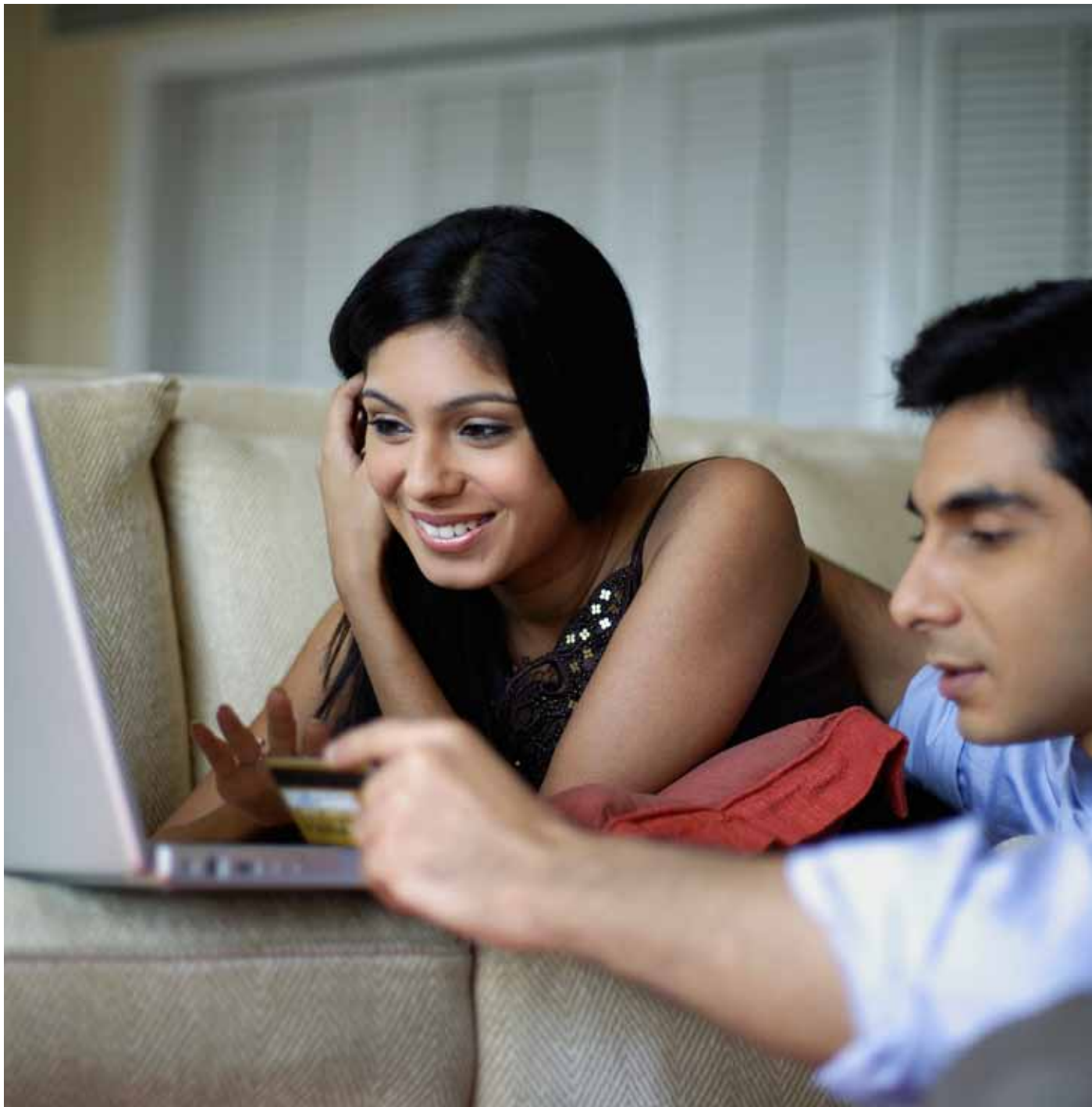
The accelerating urbanisation is straining city resources, including space, physical and social infrastructure. Urbanisation is projected to continue over the next few decades. With an ever-increasing worldwide population, citizens' demand for basic amenities such as water, energy and food is increasing considerably across the globe.

Percentage of population in urban areas, 2030

Legend:
- 80 and over
- 60 - 79
- 40 - 59
- 20 - 39
- < 20
- Not estimated
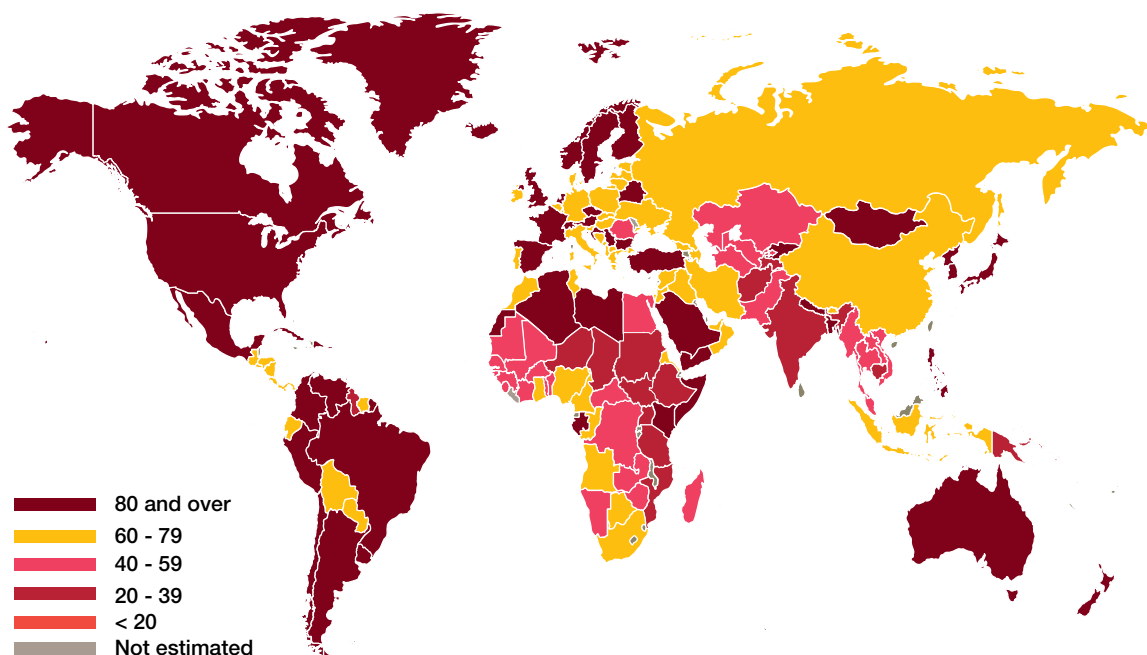
Source: UN Department of Economic and Social Affairs
* An indicative only

As a result, cities are plagued with problems such as air pollution, waste management, poor water and electricity supply, ageing infrastructure, resource scarcity and traffic congestion. With an increasing inflow of migrants, cities need to alter their way of functioning in order to disseminate public services.

The Indian context

Urbanisation in India is rapid and propels social and environmental challenges. Cities are characterised by strained infrastructure which manifests itself in terms of power cuts and water shortages, a high cost of living, and unaffordable real estate resulting in urban sprawl and slums, a high volume of traffic resulting in pollution and delays.
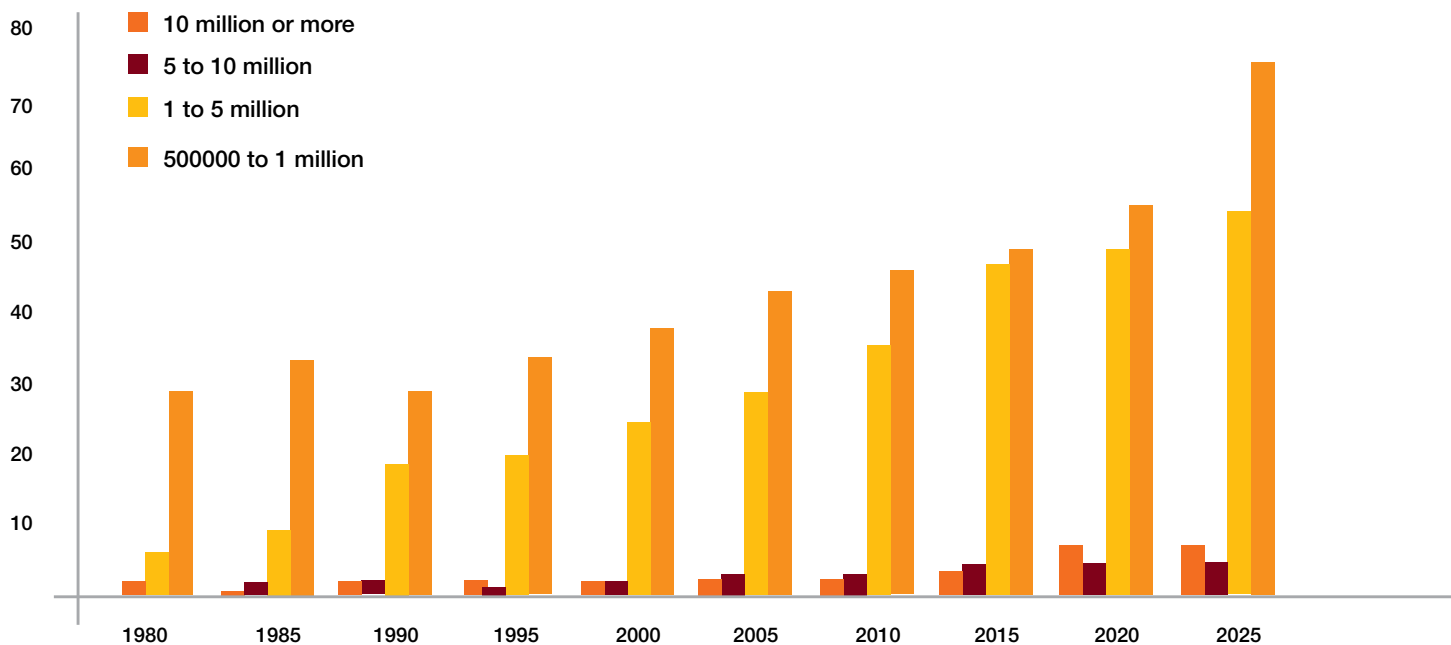
World urban population

72% increase

The world urban population is expected to increase by 72% by 2050

Source: World Urbanisation Prospects: 2011 Revision, Produced by the UN Department of Economic and Social Affairs

Urban agglomerations in India between 1980-2025

Legend:
- 10 million or more
- 5 to 10 million
- 1 to 5 million
- 500000 to 1 million

Source: World Urbanisation Prospects: The 2011 Revision; PwC analysis

By 2025, India will have six megacities housing a population of 10 million or more, up from three such cities today. As per estimates, India will house 63 cities with a population of 1 million or more, as against 43 such cities in 2011.
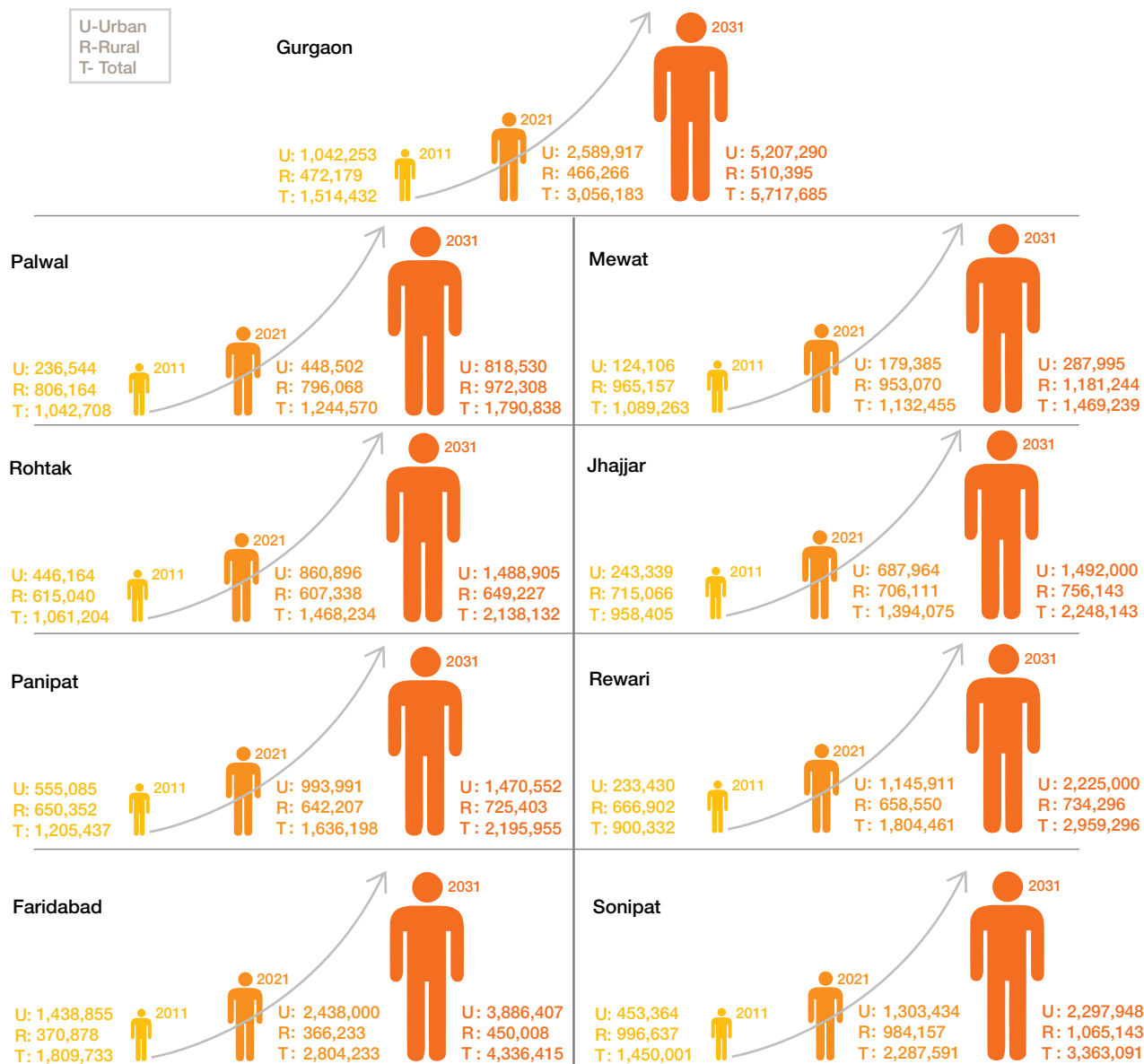
Haryana

Haryana has shown a positive growth pattern since its formation years. However, it has also led to rapid urbanisation as per the global trend. Urban growth has increased much after state formation in 1966. In the 1981 Census, urban population touched 22% and as per the 1991 Census, it increased to around 25%. The establishment of Haryana Urban Development Authority (HUDA) also promoted the process of urbanisation as it launched new industrial projects and developed residential sectors in some districts. This led to urbanisation figures reaching 28.92% in 2001 and touching 34.79% in the 2011 Census.
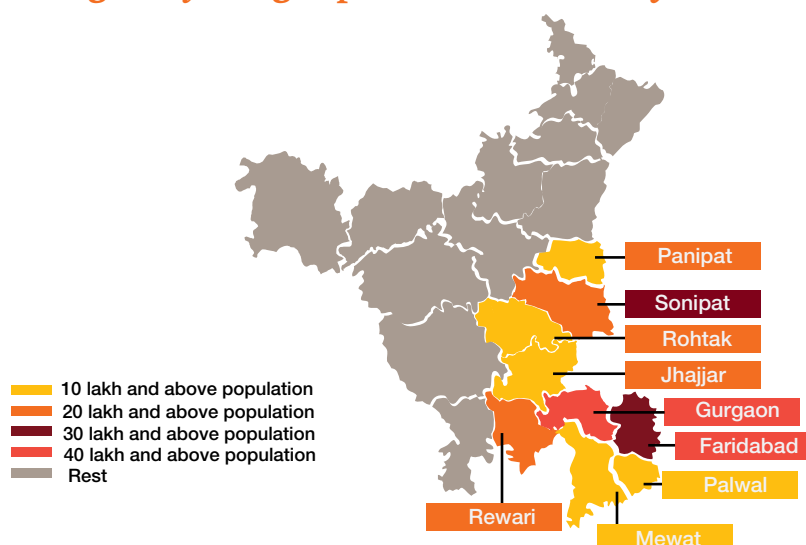
As per the 2011 Census, Faridabad is the most urbanised district (79.44%) followed by Gurgaon (68.82%), Panchkula (54.87%), Panipat (45.47%) on account of industrial development, strategic location, administrative function and close proximity to NCR.

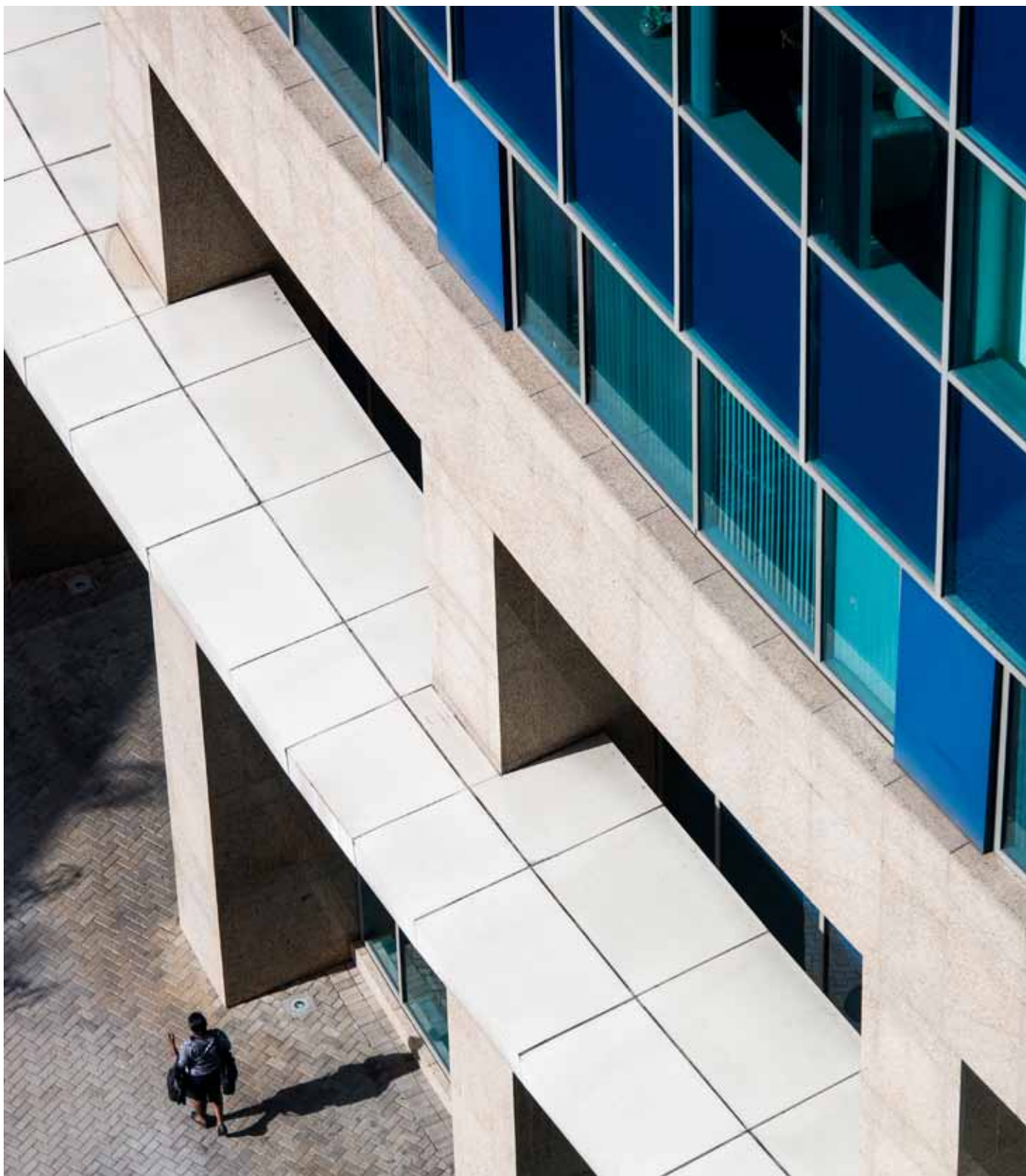# Future urbanisation trend of Haryana

U-Urban
R-Rural
T- Total

Gurgaon

2011
U: 1,042,253
R: 472,179
T: 1,514,432

2021
U: 2,589,917
R: 466,266
T: 3,056,183

2031
U: 5,207,290
R: 510,395
T: 5,717,685

Palwal

2011
U: 236,544
R: 806,164
T: 1,042,708

2021
U: 448,502
R: 796,068
T: 1,244,570

2031
U: 818,530
R: 972,308
T: 1,790,838

Mewat

2011
U: 124,106
R: 965,157
T: 1,089,263

2021
U: 179,385
R: 953,070
T: 1,132,455

2031
U: 287,995
R: 1,181,244
T: 1,469,239

Rohtak

2011
U: 446,164
R: 615,040
T: 1,061,204

2021
U: 860,896
R: 607,338
T: 1,468,234

2031
U: 1,488,905
R: 649,227
T: 2,138,132

Jhajjar

2011
U: 243,339
R: 715,066
T: 958,405

2021
U: 687,964
R: 706,111
T: 1,394,075

2031
U: 1,492,000
R: 756,143
T: 2,248,143

Panipat

2011
U: 555,085
R: 650,352
T: 1,205,437

2021
U: 993,991
R: 642,207
T: 1,636,198

2031
U: 1,470,552
R: 725,403
T: 2,195,955

Rewari

2011
U: 233,430
R: 666,902
T: 900,332

2021
U: 1,145,911
R: 658,550
T: 1,804,461

2031
U: 2,225,000
R: 734,296
T: 2,959,296

Faridabad

2011
U: 1,438,855
R: 370,878
T: 1,809,733

2021
U: 2,438,000
R: 366,233
T: 2,804,233

2031
U: 3,886,407
R: 450,008
T: 4,336,415

Sonipat

2011
U: 453,364
R: 996,637
T: 1,450,001

2021
U: 1,303,434
R: 984,157
T: 2,287,591

2031
U: 2,297,948
R: 1,065,143
T: 3,363,091

Regions facing rapid urbanisation by 2031

Panipat
Sonipat
Rohtak
Jhajjar
Gurgaon
Faridabad
Palwal
Mewat
Rewari

- 10 lakh and above population
- 20 lakh and above population
- 30 lakh and above population
- 40 lakh and above population
- Rest

An indicative only

Transforming to smart urbanisation

Urbanisation is vital for a nation's economic development. It brings with it opportunities for economic growth and provides additional prospects of entrepreneurship as well as employment to the population. This enables faster inclusion of more people within the growth story and is therefore more inclusive.

Smart cities: Key components

Though a boon, urbanisation also brings along with it several challenges that can act as a barrier to growth achieved over a period of time. It is a proven fact, that the trend has a straight correlation with growth. However, if not efficiently managed, it can lead to a negative proposition.

In the recent past, Haryana has seen a natural progression in its development story, with its villages turning into towns, and towns transforming into cities. Now, the time has arrived for the state to transform its **cities into smart cities and achieve vision of smart urbanisation.**

Cities around the world are seen as engines for sustainable economic growth. Growth achieved by cities will be strongly linked to their ability to address urbanisation and associated social, environmental and economic issues in a holistic manner, while making the most of future opportunities.

Smart cities leverage technological as well as existing investments within the urban infrastructure set up so as to enhance the quality of life of its citizens, provides a positive investment climate for businesses, and equips governments to maximise resource utilisation and provide transparency. They can be considered as organic integration of various systems which includes IT, physical, social and business infrastructure. These systems collectively work together in order to generate intelligent and actionable information for decision-makers.

Shift from a traditional to a smart city model

The inclination to adopt the smart city model is driven by the need to surpass the challenges posed by traditional cities. Overcoming these critical challenges in a systematic manner is critical for cities exploring a shift towards more sustainable city development measures among all stakeholders: citizens, businesses and the government. The quality of delivery from foundational elements of traditional cities is enhanced by leveraging technology.

Traditional city | Discontinuous experience in smart cities | Smart city

Traditional city

- Difficult to access citizen services, Multiple hand-offs/ interactions, extensive deals, need the 'middle-man'
- Limited record of citizen health history resulting in inaccurate diagnosis, higher costs for operators and insurance providers
- High congestion, slow moving traffic, high pollution, hard to find parking
- Lack of a unified city view – 'always dug up' feeling, unnecessary spend
- Water shortages, timed water supply, revenue losses for the provider
- High power theft resulting in power shortages and intermittent blackouts, environment unfriendly alternate solutions
- Investors unable to get detailed information about the business environment in the city

Smart city

- Simplified and efficient government – citizen/ business interactions, lower cost to operate
- Lower instances of medical errors resulting from unavailability of prior information, higher efficiency in hospital operators
- Better traffic flow, low pollution, citizen directed to free parking in high traffic areas
- Unified city view – better planning of city works, lower cost to execute
- Continuous and round the clock water supply, higher collections for the provider
- Low theft, higher collections for the provider, adequate power supply, no black-outs, lower carbon emissions
- Higher awareness and dedicated efforts for sustainability through IBMS

* An indicative only

Framework for sustainable city development

Merely investing in enhancing a city's infrastructure is not sufficient. Projects that primarily focus on expanding capacity are not necessarily the most effective way of serving community needs, and neither are they sustainable in the long run. Absence of a viable business model and oversight will challenge the economic feasibility as well as the   effectiveness of such investments. Such projects will constantly require funds and assistance from the government and external agencies, and still not ensure quality. For urbanisation to be successful, three goals need to be achieved where the benefits have to be the following:

- Socially equitable
- Economically viable
- Environmentally sustainable
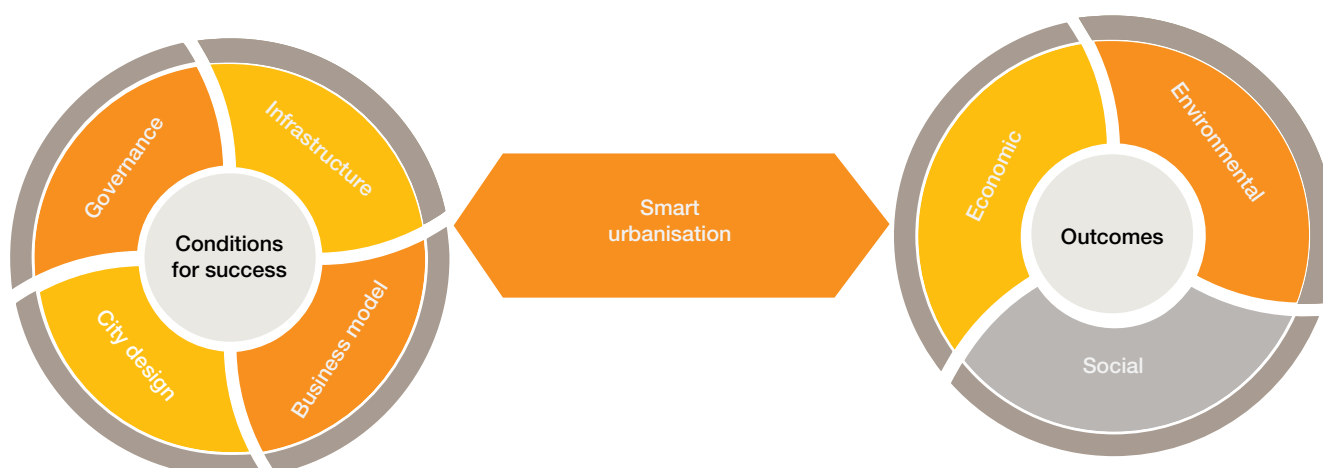
Making it happen
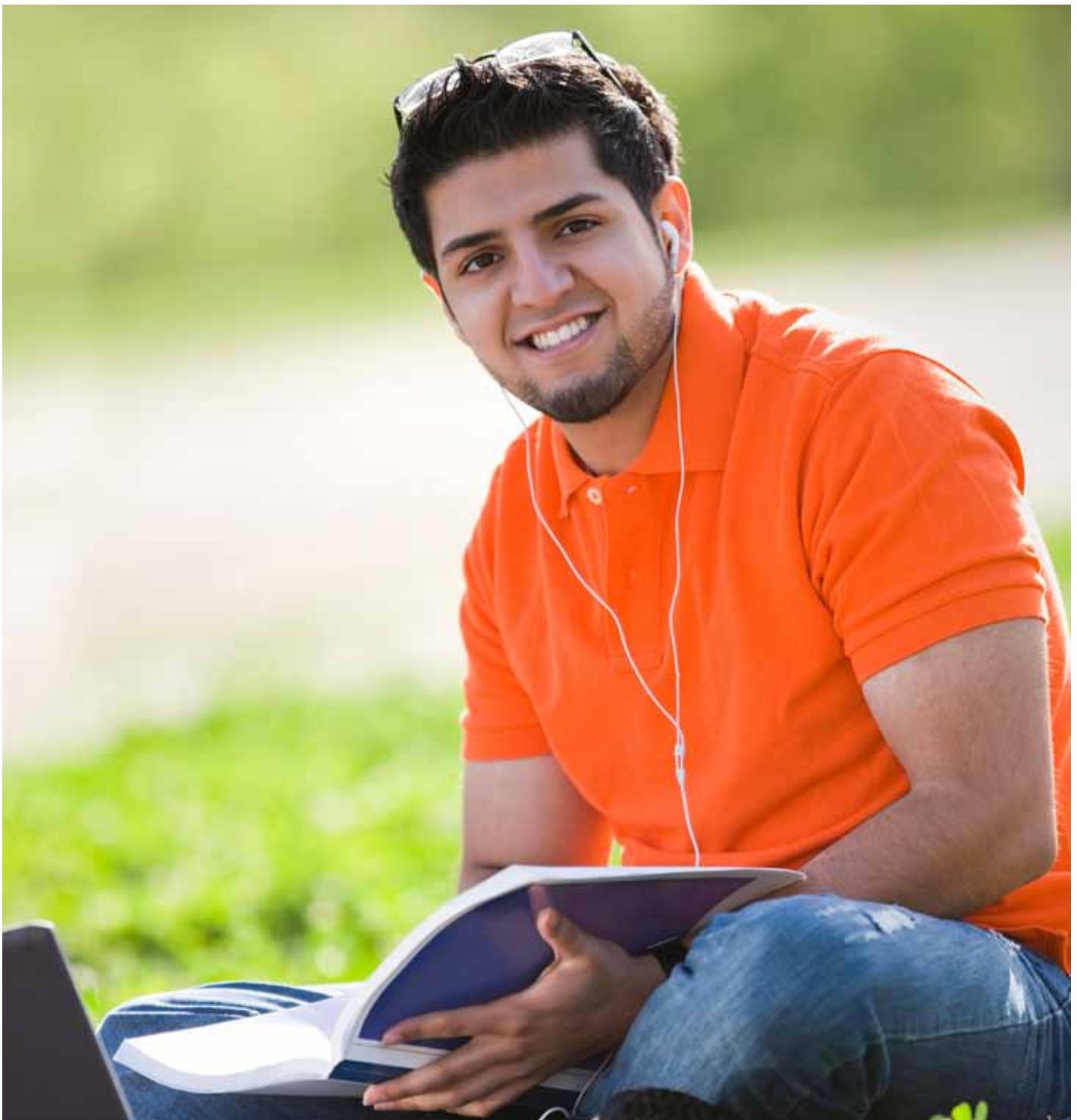
City governments as well as administrators need to develop an implementable strategy on ways to achieve the future development goals of a sustainable and competitive urbanisation that can address social, environmental and economic issues in an integrated manner. However, the most pressing challenge for many cities and their respective administrators is the implementation of these goals and transforming city strategies into reality.

Holistic approach for developing a state-level strategy for smart urbanisation

Phase 1

Assessment
Assessing city demographics,
Profile, social and physical infrastructure to support current city requirements and its preparedness to transform into a smart city

Phase 2

External stakeholders

Clear, ambitious and widely shared vision

Internal stakeholders

Phase 3

Building transformation capabilities
• Inspirational leadership
• Resilient city brand
• Social intelligence
• Innovation
• Financing and financial
• Management capability
• Collaborative partnering
• Prioritisation and implementation planning
• Programme and project management

Successful execution of strategy

Delivery of outcomes

The starting point for a city is formulating a clear vision that captures its strategic ambition. In order to channelise all resources towards accomplishing this vision, the city's management has to develop multiple internal capabilities: a competent leadership, a resilient city brand and the ability to learn from other cities through social intelligence. It needs to manage its finances effectively. It also needs to have the capability to manage its key programmes as well as projects, performance risks and assets, including the human capital employed in performing any of the city's functions. All of these initiatives need to be executed in a sustainable manner, and through collaboration and partnering with citizens, the private sector, academia and non-governmental organisations (NGOs).

Haryana's city readiness assessment

Prior to articulation and development of any strategy, it is important to take stock of the current situation of the city and its expectation, going forward. We are of a firm belief that assessment is the cornerstone of developing a successful smart city strategy.

Key parameters for assessment by city administrators

City master plan
- Plan vintage
- Appropriateness

City theme
- City characteristics – industrial, urban, IT, satellite, heritage

City demographics
- Population
- Economy, trade & history
- Education rate, crime rate, pollution levels, etc

Optical fibre
- Percentage of city covered with fibre
- Wi - Fi

Geospatial map
- Percentage of departments having GIS maps
- Number of layers of city assets

Technology readiness
- Percentage of internet users
- Percentage of smartphones

Policy framework
- Regulatory environment
- CIO/ City Nodal Agency
- ROW policy

One stop portal
- City information
- City services
- Service delivery channels

Citizen readiness
- Willingness to adopt change
- Willingness to spend on value added services

Assessing the smart city agenda and shortlisting the key areas of focus

Taking stock of Haryana's cities and setting targets

- 24x7 supply of water
- Metering of water connections, billing and collection efficiency
- Online payment facility
- Households connected to the waste water/sewerage network
- Treatment of waste water, use of treated water

- City population with regular solid waste collection
- Collection and recycling of municipal solid waste
- City solid waste that is disposed in a sanitary landfill/open dump/burnt
- Hazardous waste recycling

- Traffic management system
- City parking management
- Access to paratransit
- Availability and frequency of mass transport
- Traffic violation detection/ speed violation detection/ red light violation detection
- Availability of bicycle tracks

- City surveillance
- Online FIR, complaints etc registration
- Verification/validations/clearance
- Complaint response time

- Number of hospitals based on population density requirement
- Healthcare facilities
- Emergency response facilities Ambulance, emergency ward etc and response time

- Primary and secondary education Facilities
- School for specially abled
- Student teacher ratio
- Number of schools and colleges based on population density requirement

- 24x7 quality electricity supply
- Metering, collection and billing
- Low distribution losses
- Energy efficiency, street lightening projects

- Fire station basis population density
- Efficient fire fighting systems and special materials
- Disaster prediction system- earthquake etc - early warning system, disaster alarm and response System

Central diagram: Smart city essentials — Water and sewage, Solid waste mgmt, Public safety, Education, Fire and disaster mgmt, Power, Health, Transport

City level strategy and key action points

City administrators and policymakers have a critical role to play in terms of articulating the overall strategy for the development and transformation of Haryana's urban spaces into smart cities. Towards this, policymakers need to draft a city plan that takes into account city-level agendas as well as priorities. Factors such as ensuring the success of the project, a conducive financial environment are required to be brought in place in order to ensure continuity of funds during the transformation cycle, sound risk-return profiles and sustainable business models for partners in transformation. There is also a need to build an effective mechanism to measure, monitor, evaluate city performance and report it back to the city inhabitants.

Step-by-step guide to a smart city

Step 1

City vision

- Defining city characteristics
- Defining smart city vision and goals
- Defining city level measurable KPI's (key performance indicators)

Step 2

City master planning

- Creation and approval of city master plan or upgradation of existing plan
- Finalisation of smart city initiatives
- Creation of smart city information and communication technology (ICT) master plan

Step 3

Procurement strategy

- Phasing for identified smart city initiatives
- Creation of regulatory and governance framework
- Procurement management and documents

Step 4

Implementation, operations and sustainability

- Implementation of identified smart city initiatives
- City operation and monitoring against KPI's
- Project sustainability monitoring

The overall strategy needs to also ensure smooth functioning, inter-department cohesiveness and seamless coordination between multiple authorities. Moreover, SLAs (service level agreements) need to be created for timely completion of tasks as well as deliverables. In addition, dependencies and reporting structures need to be clearly defined and documented in order to assure transparency and minimise downtime as well as unnecessary delays.

Key recommendations

Setting up of a task force

- Setting up of a task force to manage and ensure smooth functioning of the city

Citizen-centric solutions

- Focus on citizen-centric services
- Single point of convergence for citizen transactions and information dissemination
- Introduce citizen charters
- Business focus

Governance

- Create a mayor or chief information officer (CIO) office and bestow executive municipal authority to the mayor
- Privatisation of public service delivery
- Connected and participative governance
- Set up a municipal services supervisory body
- Clarify roles of urban local bodies (ULBs) and state-owned entities

Planning

- Land reformation
- Restructure the role of development authorities
- Hands-on planning process
- Geospatial development
- Set up state planning boards (SPBs)

Funding

- Ensure revenue sharing the from state to ULBs
- Shift in approach from public private partnership (PPP) to people public private partnership (PPPP)
- Increase investment in the urban sector
- Set up a state level development fund
- Encourage pricing of floor space index (FSI)
- Define a land monetisation framework
- Determine user charges to cover the operations and maintenance (O&M) costs

Capacity building

- Create a municipal cadre
- Capacity assessment

Energy

- Promoting energy-efficiency and management

Urban transport
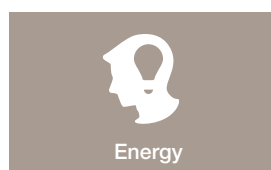
- Strengthen local transport
- Paratransit between multiple modes of transport
- Basic infrastructure needs to be addressed

Water supply and sanitation

- Cut costs and distribution losses by establishing water sources closer to the demand
- An integrated function-water supply and sanitation
- Set realistic and time bound targets for recycling and re-use of treated waste

Setting up of a task force

In order to cover all aspects of transformation, it is essential to set up a task force that carries a single point of agenda of accelerated development of smart cities in Haryana by facilitating coordination and building synergies between national level and regional level stakeholders.

The objective of this task force will be to create a platform for knowledge exchanges, conducting research, innovations, policy developments, etc. Among various public and private members, academic institutions, NGOs, global establishments etc.
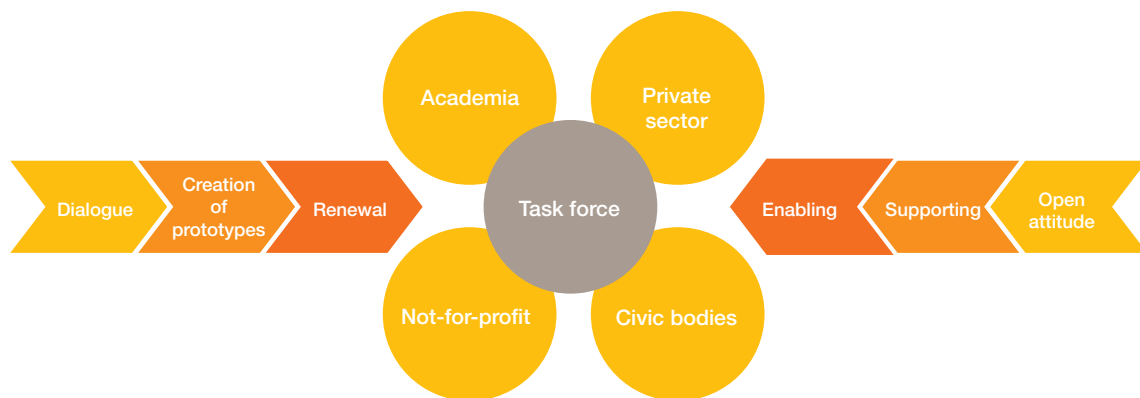
Stakeholder collaboration : Creating a new playground for growth

Task force should constitute of the following representatives

• Representative from industries
• Representative from manufacturing sector
• Representative from urban development
• Representative from social sector such as health, education and public safety
• Representative from academia
• Representative from consulting sector
• Representative from ICT sector
• Representative from non–profit organisations

Haryana task force key responsibility area

• Establish a platform within Haryana for discussion on smart urbanisation definition, framework, governance aspects, implementation approach, priority areas, leading practices and case studies
• Develop broadly accepted smart urbanisation standards, processes and protocols
• Create awareness of smart urbanisation in Haryana and facilitate coordination and amalgamation of various activities
• Facilitate dialogue among pool of experts with inter-disciplinary competences for sharing thought and ideas
• Identify key services for citizen and businesses to be delivered by including but not limited to:
  – Synchronisation of other relevant inter departmental and governmental activities.

Citizen-centric solutions

Focus on citizen-centric services

Haryana's city administrators need to design the smart city strategy and solutions keeping the citizen's requirements and expectations as the key priority area. During the planning stage, city administrators need to evolve a matrix detailing the services that will be enabled for citizens and respective steps and systems that are required to be rolled out by various city agencies in order to facilitate the initiative. Citizens will be the prime beneficiaries from smart cities and will be the most impacted group among various other stakeholders. It is important that all citizen-centric services are developed keeping the three key pillars of the smart city framework in mind, that is quality of life, livability and sustainability.

- Quality of life includes areas such as safety and security, inclusiveness, entertainment, ease of seeking and obtaining public services, cost-efficient healthcare, quality education, and opportunities for participation in governance.
- Livability covers areas such as employment opportunities, investment sentiment and people. The ease of being able to do business, travel and the quality of life that a city offers determines its livability index.
- Sustainability includes areas such as social sustainability, environmental sustainability and financial sustainability

Single point of convergence for citizen transactions and information dissemination

Various components of a smart city must work hand-in-hand in order to provide a holistic, city-wide single view and management. Different city components such as surveillance and safety systems, smart grids, metering, utilities and intelligent transport systems must be closely interlinked with one another in order to provide a unified view to citizens or end users. With a single point of convergence, an end user or citizen will have to register data with the government only once. Subsequently, this data will be shared and disseminated to various authorities or a digital repository can be created in order to store all relevant documents for sharing purpose with other departments following an authentication process. With this system in place, a particular department or the administration need not repeatedly ask for data details from citizens or businesses. Documents can include e-documents, ranging from birth certificates to passports, driving licences, policy papers, voter identification cards to educational certificates and degrees. This will usher in a new era of paperless and digital revolution. Another use of convergence is to offer single smart cards with all biometrics, key details for multi-model transport and using this card for availing various other government services such as payment for utility bills. Moreover, a common card for use in making payments in all modes of transports as well as for shopping or other commercial purposes will add to the convenience of the public. These cards will homogenise all systems, make lives of people less complicated, and eliminate the need to generate multiple pins and passwords.

Introduce citizen charters

A citizen charter needs to be introduced by municipalities within the state which will contain the complete details of all services in the state. It needs to entail specifics on service levels for all services, timelines for approvals relating to services and the relief available to the citizens in case of non-adherence. As an example, a transparent single-window clearance system for all building proposal approvals need to be created by municipalities in the state.

Business focus

High ranking in the ease of doing business indicates better, usually simpler, regulations for businesses and stronger protection of property rights. This in turn increases investments in the state thereby contributing further to its economic growth.

Governance

Create a mayor or CIO office and bestow executive municipal authority to the mayor

A central office also termed as the mayor's or the CIO office needs to be created. This office needs to serve as the operational body for transformation to a smart city model. It needs to act as the single point of contact for addressing all concerns of the city. The mayor or CIO need to have executive authority and corresponding accountability. Any administrative or legislative procedure, if required, for bestowing power to the mayor or CIO office needs to be exercised accordingly.

Privatisation of public service delivery

In large and complex areas of work, outsourcing public service delivery to the private sector must be considered. Some departments can be carved out under the mayor or CIO office in order to function efficiently and facilitate quick decision–making. Financially, sound and sustainable business models needs to d be chalked out in order to engage private players.

Connected and participative governance

Participative governance is a key component of new-age smart cities and economies. In order to build lasting relationships with citizens as well as seek their contribution towards the overall growth of the nation, governments need to regularly engage with citizens and gauge their pulse prior to implementing key policies and regulations. Key developments such as the advent of the internet, mobile devices and smartphones have transformed the way people interact with one another as well as the government. Social media is emerging as a prominent platform for citizens and policymakers to reach out to one another. Governments are relying on analytics to gauge the sentiments of the people and accelerate the grievance redressal process. Connected governance is beneficial for both citizens as well as governments alike. Several economies, both developed and developing, have successfully implemented citizen engagement platforms. In India, the central government is ushering in new, vibrant reforms on various fronts in order to emerge as a leading democratic power. The government progressively taking steps to develop a connect with its citizens. For this endeavour, MyGov, an internet-based platform for citizen engagement was launched by the government in July 2014. The portal is a one-of-its-kind interactive platform that solicits ideas, views and suggestions from citizens, irrespective of their location. It helps people from all walks of life to participate in policy formulation and execution, as well as share their perceptions directly with the Prime Minister of India. The portal is expected to set up new standards for connected governance, and the Haryana state government needs to take cognisance of the same and develop a similar mechanism to establish a connect with its citizens.

Set up a municipal services supervisory body at the state level

An independent supervisory body needs to be set up at the state level in order to counsel, regulate, monitor and arbitrate on desired levels, the roles and responsibilities of all utility providers at the city levels.

Clarify roles of ULBs and state-owned entities

A common platform for the collaborative functioning of ULBs and state-owned entities which also clearly defines the roles and responsibilities is necessary. An example of this can be a service level agreement (SLA) led contractual arrangement between the two bodies.

Planning

Land reformation(LR)

This must be considered by the by the state or city authorities in order to avoid public discontent and protests that land acquisition may generate. It includes activities such as redrawing of boundaries and adjustment of property rights.

Restructure the role of development authorities (DAs)

DAs need to function as the technical arm and leverage its technical capabilities of being a planner and regulator. It may also be the appellate authority for conflict resolutions on the spatial plans for all ULB plans within the metropolitan region.

Hands-on planning process

A major aspect of Haryana's urban planning needs to consider engagement of its citizens in order to make the state an engine of all-encompassing growth. Citizen participation in the planning processes must be a mandate.

Geospatial development

The city or town geospatial departments need to create a futuristic spatial development plan for Haryana which will include not only the rural and urban areas but also the peripheral urban areas. This plan then need to be used as a guiding outline to create the second tier of planning for the city.

Set up state planning boards (SPBs)

Haryana must constitute and strengthen the state planning board and mandate it with the preparation of state-wide strategic spatial development plans (SDPs).

Funding

Ensure revenue sharing from the state to ULBs

Revenue sharing by Haryana needs to be looked into wherein a certain percentage of the state revenue needs to be shared with the ULBs. The percentage sharing and contribution can be considered on the basis of economic activity, population and other relevant factors. It has been found that financial sustainability of ULBs and predictability of municipal finance encourages private investments.

Shift in approach from PPP to PPPP

The government of Haryana needs to change its outlook towards PPP projects and should covert them into people-private-public-partnership (PPPP) projects which take into account the citizens' involvement in the urbanisation process. The participation of citizens in the design of the city will play a key role in the development of the state.

Increase investment in the urban sector

Today, the state caters to a population of 2.53 crore which will grow exponentially by 2031. In order to meet the growing needs of the population, Haryana will need to significantly step-up its investments in the urban sector and establish a state level dedicated fund for the state's urban sector development.

Set up a state-level development fund

A state-level development fund needs to be set up for Haryana which will contain revenue accrued from advanced sources such as land monetisation, etc. These funds then need to be used for urban infrastructure projects of the state only.

Encourage the pricing of FSI

The option of development beyond the current restrictions of FSI needs to be provided, and the additional FSI needs to be provided selectively and charged for. The charges levied for additional FSI and land-use conversions must be determined professionally and needs to be at least 50% of the area rate in the concerned area. The revenue generated can then be used to fund other infrastructure projects within the state.

Define the land monetisation framework

In order to determine the value of the land and tackle issues related to land values, a clear framework needs to be designed. However, the framework needs to be transparent and accountable with due attention to the needs of the poor and marginalised sections.

Determine user charges to cover the O&M costs

In order to effectively cover O&M costs incurred, appropriate level of user charges must be determined and levied for all measurable services where beneficiaries are easily identifiable. Ideally, a tiered structure where higher levels of consumption exist, a higher tariff needs to be charged.

Capacity building

Create a municipal cadre

A municipal cadre needs to be instituted which can take care of the intricacies of modern governance and challenges with quick turnaround time.

Capacity assessment

The present capacity building efforts must be assessed in order to determine the deficit or gap in capacity at different levels and steps to resolve the same must be taken up.

Energy

Promoting energy-efficiency and management

LED street lighting

The government needs to mandate the use of LEDs in street lighting. LEDs consume less wattage and provide efficient lux level for the specified space. The use of efficient lighting infrastructure can help reduce energy usage between 25 to 60%. For instance, retrofitting conventional streetlights with LEDs can result in a potential annual savings of 4300 million KWh, which is around 50% of the total energy consumed.

Certified green buildings and building efficiency

The government needs to encourage the construction of green buildings within the state. Green buildings are economically, environmentally and socially sustainable. They are one of the feasible solutions in order to restrict the ongoing depletion of resources and encourage optimisation in energy use, conservation of natural resources, generation of less waste, and healthy spaces for occupants.

Energy-efficient data centres

Data centres within commercial, IT buildings or business process outsourcing (BPOs) consume a major share of electricity each day. Replacing inefficient data centre equipment with efficient ones will help save the overall electrical energy consumed in a building, and hence reduce the load on the discoms (distribution companies).

Smart grid

The government needs to encourage smart grid implementation across Haryana's electricity value chain from efficient generation, transmission and distribution of electricity.

Prosumers as consumers

In order to promote and encourage the production of electricity through renewable methods , the government needs to set up policies which define the rates at which citizens can sell electricity units back to the grid and an equivalent deduction in costs from the citizen's bill can take place automatically.

Water supply and sanitation

Cut costs and distribution losses by establishing water sources closer to the demand

City planners need to device a mechanism to build water supply close to its demand. Demand forecasting needs to be relooked and new investment in augmenting city water supply must consider bringing the water source near the demand centre. This will save laying cost, maintenance cost and also reduce water losses due to leakages, etc that the state invests in not only creating infrastructure for ground water replenishment but also invest in order to maintain the same.

Water supply calculations must also include the groundwater slabs

During the planning of urban water supply, groundwater source needs to also be included in the calculations.

An integrated function for water supply and sanitation

While planning the augmentation of water supply in the city, planners need to also augment the capacity of sewage water treatment. Possibilities need to be explored of treating water at the source itself in order to save costs.

Smart grid

Mechanisms need to be developed in order to provide incentives to industries for encouraging re-use of waste water. City beautification maintenance need to be rolled out using treated water and a mandate must be released by the state government for the same.

Set realistic and time bound targets for recycling and re-use of treated waste water

Mechanisms need to be developed in order to provide incentives to industries for encouraging re-use of waste water. City beautification maintenance need to be rolled out using treated water and a mandate must be released by the state government for the same.

Urban transport

Strengthen local transport

As per the current situation, Haryana's public and local transport is dissatisfactory. As an example, the autorickshaws in Gurgaon are not regulated and the fares charged to commuters are not metre-based. This causes a lot of inconvenience to the citizens on a day-to-day basis which is detrimental to the growth of the city, and in turn to the state. Lack of safe and clean public transport is a disadvantage for the citizens. The state needs to take up initiatives in order to improve the quality of public transport and include better modes of transport.

Paratransit between multiple modes of transport

Sudden and rapid urbanisation has led to several gaps in the transport system of the state. The absence of paratransit systems between the modes of transport in the state must be addressed.

Basic infrastructure needs to be addressed

The absence of walkways on highways, construction of footpaths and cycling paths as well as other facilities are major factors that are a source of inconvenience in the daily life of a citizen. The government needs to look into developing the fundamental infrastructure of the state along with larger infrastructure projects.

About CII

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, government, and civil society, through advisory and consultative processes.

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