Smart City @ CIDCO Navi Mumbai (South)
- **Objective Area:** Swachh Bharat
- **Project in Focus:** Development of Terminus Station at Panvel

Data Sheet: Smart Cities Davanagere: Retrofitting local industries

Knowledge Lab
- CIDCO Training Portal: Ujjwal
- Training Through Ujjwal

Data Sheet:
- How to use Ujjwal
- Training Policy Eligibility Matrix

Inclusive Planning
Kochi Metro and Kudumbasree, Partners for Inclusive Planning

Smart City Corner
**Smart City Plan:** Columbus, Ohio

National Smart Cities Mission
Smart Cities Challenge Round III and Launch of Liveability Standards

The Art of Learning Design

Bibliography

CIDCO Smart City Lab @ NIUA

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**Project Coordinator**
Ravindrakumar Mankar (ACP, Navi Mumbai)
The Government of India initiated Swachh Bharat Mission last year to address the waste disposal challenge in India. CIDCO supports the mission through the implementation of new technologies for waste management practices. CIDCO is investing INR 378.75 Crore by 2020 towards new sewage treatment plants (STPs), GIS based mapping of health hotspots and solid waste management. The following is an overview of its key initiatives:

1. Construction of New Sewage Treatment Plants (STPs)

CIDCO plans to construct six sewage treatment plants with Sequential Batch Reactor Technology at various nodes with the aim to enable the reuse treated water for non-drinking applications. CIDCO is developing a 64 MLD STP as a part of the physical infrastructure along with the development of land and housing at Ulwe node. The STPs of capacity 25 MLD, 85 MLD and 50 MLD are already operational in Kharghar, Kamothe and Kalamboli, and 70 MLD, 32 MLD, 32 MLD and 20 MLD are under construction in Kharghar, Taloja, Ulwe and Karanjade (Panvel) respectively.

2. Extrusion Based Mechanical Biological Treatment for MSW

At present CIDCO Navi Mumbai region generates about 300 tonnes of solid waste per day. This waste is treated and disposed at a 35 acre Chai village site in Taloja. The facility was initially designed for handling 55 TPD of municipal waste; however, with consistent increase in population and amount of waste generated, the plant now handles 300 tonnes of solid waste every day. It uses the “aerobic windrow composting” method. The landfill area is expected to be exhausted within the next 2 years, leaving CIDCO without an alternative disposal site. The site is considered as a nuisance by the local communities due to odour, leachate generation, ground water contamination and spontaneous fires. As a result, CIDCO has decided to develop a new solid waste treatment facility for its region. It is expected to resolve environmental issues while complying with the MSW 2000 guidelines. CIDCO plans to carry out processing and disposal of solid waste by adopting new extrusion based mechanical technology at the site vetted by IIT Mumbai and Roorkee. The plant is to be installed initially to handle 300 TPD MSW and subsequently augmentable to 600 TPD of waste.

3. Electronic Medical Record Integration

Integrated Electronic Medical Record Systems (EMRS) are becoming an essential part of the Modern Health Care. They have evolved from pure record keeping to an integrated enterprise wide system that holds the promise of accurate real time access to patient health care data. Electronic Medical Record can be defined as a software suite of integrated functionalities built around a common database. Such functionaries will typically include Electronic Health Record, Diagnostic Tools, Patient Billing, Electronic Prescribing and Practice Management. Integrated Electronic Medical Record Systems can provide health care administrators and clinicians with information necessary to improve patient care and lower costs. The first phase EMRS will be started at CIDCO’s Health Centres, government hospitals and trust hospitals in CIDCO Navi Mumbai (South) area. CIDCO plans to recruit a qualified
vendor to conceive, create, install, train and support the EMR project by December 2017.

4. Mapping of Public Health Hot Spot
Public health information has significant value for doctors, public health officials, epidemiological researchers, the public, and government agencies. Unfortunately, this data is difficult to obtain and is typically collected on as-needed basis and maintained locally. An on-going systematic collection, analysis and interpretation of health data that is necessary for designing, implementing and evaluating public health prevention programs are proposed. Hospital Management Information System (HMIS) is sought for mapping of public health in CIDCO area. HMIS is a systematic collection compilation analysis and interpretation of data related to Health Services and National Public Health related programmes from all health care providers.

5. Decentralised Solid Waste Management in JNPTIA
The projected population of seven lakhs in Jawaharlal Nehru Port Trust Influence Area (JNPTIA) is expected to generate 245 tonnes of solid waste every day by 2025. The existing landfill site in Navi Mumbai is approximately 35 km away for JNPTIA leading to high transportation and handling cost. Therefore development of other methods of SWM is deemed necessary to minimise expense and prevent health hazards. CIDCO is collaborating with Gram- Panchayat and NGO partners to develop decentralised solid waste unit in Jasai to address the issue. This project will eliminate need for long distance transport of solid waste that causes foul odour and health hazards.

6. Optional Services-Ambulance with Telemedicine
An ambulance-to-hospital based telemedicine system is the best example of how mobile technology can help save lives. It provides real time patient information to the hospital via wireless communications, enables remote diagnoses and primary care, and reduces rescue response time. Telemedicine includes a growing variety of applications and services from remote health monitoring to medical education. Among these applications, ambulance-based telemedicine uses the most up-to-date vehicle electronics and mobile communications technology, aimed at providing a significant time advantage, expediting critical treatment and improving patient outcomes.
Background
Main line and suburban corridor of Central and Konkan rail pass through Navi Mumbai. Most of the long distance trains to different part of the country originate from Mumbai CST, Kurla, Bandra in Mumbai and Navi Mumbai residents have to travel to these terminals for boarding long distance originating/terminating trains. Under these circumstances, it was deemed necessary to develop a coaching terminal for long distance trains in Navi Mumbai.

Panvel has been identified as the most suitable location for development of terminus station in view of its strategic location. Panvel is the only line station in Navi Mumbai and is well connected by suburban train services as well as by road. It has direct connectivity towards northern and western India via Diva-Vasai, to coastal Karnataka and Kerala via Konkan Railway, eastern part via Kalyan-Nashik and to Hyderabad, Bengaluru and Chennai via Karjat-Pune. Its strategic location enables Panvel to serve traffic moving in five different directions i.e. CSTM, Diva, Karjat, Roha and JNPT. As a result, it is emerging as a major transportation hub.

The Central Railways has identified five major projects at Panvel.

- Coaching Complex for catering to increase in outstation traffic (along with maintenance facilities at Kalamboli).
- Western Dedicated Freight Corridor passing through Panvel.
- Panvel-Mumbai CST Fast Corridor
- Panvel-Vasai-Virar Sub-Urban Corridor
- Extension of Sub-Urban Services to Karjat and Roha

The railways have proposed to develop the terminus at Panvel in phases. The development is proposed under cost sharing mechanism between Central Railway and GoM (represented by CIDCO). As of now the phase-I stage-I have been decided to be developed under cost sharing ratio 67:33 between CIDCO and Central Railway respectively.

Scale
Regional Scale

Estimated Cost
INR 170 Crore (Phase-I Stage-I) | CIDCO Share Cost INR 114 Crore

Completion
The stage-I works shall be completed in 2019

Detailed Scope
Phase-I Stage I

Benefits
The project of Panvel Terminus has gained importance due to Navi Mumbai International Airport. Apart from providing upgraded train transport facility, boarding of long distance trains, the aspects of commercial exploitation of the CIDCO land required for this railway facility will also be examined from the aspects of Transit Oriented Development (TOD).
Davangere aspires to be the city where LIFE nestles. The city’s vision is to leverage the uniqueness of peaceful co-habitation and its uprising prosperity, in terms of its liveability, inclusivity, financial & economic vibrancy and sustainability for enriched quality of life.

VISION

Davangere is a Tier II city in south-western state of Karnataka. It is the sixth largest city in the state and was renowned for its cotton mills in the 1980’s. The city has consistently been a hub for vibrant industrial and small manufacturing enterprises (SME) within the state for agro, bamboo, puffed rice and textile industry among others. Located strategically along the Bengaluru - Pune National Highway (NH4), the city enjoys excellent regional connectivity to major cities across India.

CITY SELF-ASSESSMENT

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<td>Literacy Rate</td>
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<td>Total SCP Project Cost</td>
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STRATEGIC FOCUS

- Balanced growth & development of the North & South areas of the city, to reduce stress on infrastructure
- Tackling issues of - congestion, poor infrastructure, unplanned formal & informal market zones, haphazard parking etc.
- Leveraging the SMEs to bring economic vibrancy and employment growth
- Improved air quality through retrofitting old industrial practices and equipment
- Lowering the carbon footprint through use of alternative energy sources

AREA BASED PROPOSAL (ABP) RETROFITTING AND REDEVELOPMENT
3.14 sq.km (4.09%)
809 Cr. INR (61.9%)

- Urban Mobility
- Pan-City Initiatives of providing intelligent solar powered street lights, intelligent traffic management system, ICT retro-fit to bus stops, providing of information kiosks and hot-spots at strategic locations
- Utility Infrastructure

PAN CITY PROPOSAL (PCP)
498 Cr. INR (38.1%)

- Smart Urban Mobility
- ICT Crowd Mapping

- Re-vitalisation of the economic precinct around the Mandipet Municipal Market
- A typological retro-fit of the Mandakki Bhatti layout

[Map representation of the area base proposal and pan city proposal with various locations marked and connected by lines and dots.]
Presence of over 1027 diverse SMEs provide limitless opportunities for growth to Davanagere. To leverage the consistent growth in the numbers of SME in the area, the city has prioritised revitalisation of physical infrastructure for MSME units in the area selected for ABD. These units have been a primary employer for a large section of the population, particularly in the northern part of the city.

The SCP proposes retrofitting of one significant SME - the Mandakki Bhatti, which will act as a model for other SME’s to draw upon. Mandakki Bhatti constitutes of puffed rice manufacturing units that use large traditional furnaces for the process. These units have been identified as the main source of air pollution in the city. Respiratory diseases have recorded a 50 percent increase in the last decade, in just the inner city.

The retrofitting intervention at Mandakki Bhatti will include technology up gradation and use of renewable energy leading to clean, green and modern manufacturing units.

The intent of the Area Based Development (ABD) in Davanagere is to transform the unplanned and congested inner core of the city, which is negatively affecting the quality of life of its citizens. With an overall extent of 785 acres, the site covers a diversity of city’s urban fabric. In alignment with the goals of the city, a critical SME located in the heart of the city - Mandakki Bhatti, an economic hub- Mandipet market and a heritage precinct - Durgambika temple have been identified for retrofit within the site. The proposal is to re-vitalise and energise these areas through infrastructure upgradation for the entire area. The infrastructure upgrade will include improved road network with non-motorised vehicle infrastructure, provision of underground utility network and excellent solid waste management system.

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The total Smart City Budget for Davanagere is INR 1307.18 Crore. The city has identified sources for 100% of its budget. It is utilising three of the five potential funding sources and its proposed per capita smart city expense is INR 30,041.
MEASURABLE IMPACT

AREA BASED PROPOSAL

Social
- Access to infrastructure
- Access to opportunities
- Access to open spaces like parks, play fields and greenery
- Mixed use
- Social interaction

Governance
- Revenue collection
- Revenue utilisation for O&M activities
- Congestion
- Commute time
- Uniformity of service delivery network
- Resource use
- Waste generation
- Waste collection
- Solid waste management
- Sewerage network
- E-governance
- Surveillance

Spatial
- Vertical development
- Floor space index

PAN CITY PROPOSAL

Social
- Open space, greenary, parks and commercial and public activities
- Pedestrian infrastructure
- Infrastructure for non-motorised modes of transportation
- Densification
- Service delivery
- Disaster preparedness
- Safety

Governance
- Collective functioning of city corporation and para-statal agencies
- Revenue collection
- Revenue utilisation for operation and maintenance activities
- Uniformity of service delivery network
- Surveillance
- Implementation of e-governance

Public services
- Zero pig menace
- Health & hygiene of city
- Air pollution
- Lifestyle
- Access & information for public transit
- Service delivery to citizens

Environmental
- Industrial emissions
- Cases of respiratory diseases
- Solar energy generation
- Urban heat island effect
- Vehicular emission

Economic
- Infrastructure for informal & formal market
- Productivity
- Efficiency
- Working conditions
- Growth
- Quality of workforce
- Production technology for puffed rice
NIUA-CIDCO Smart City Lab was established in July 2014 at the National Institute of Urban Affairs as the research and capacity building unit, providing support to CIDCO’s technical personnel through action research, documentation and capacity building. Since its formation, the lab has supported CIDCO in a variety of activities, including the launch of CIDCO Smart City (South) in 2015. Entering its 4th year, NIUA-CIDCO Smart City Lab is now aiding the implementation of CIDCO’s new Training Policy1 through Ujjwal, CIDCO’s first online Training Portal. The Training Policy was approved by the CIDCO Board as a step towards achieving the objectives set under the ‘Smart Organisation’ vertical of CIDCO’s Smart City Vision. Its key objective is to overcome barriers to training and knowledge enhancement for all Class I & Class II CIDCO officers.

Ujjwal is an integrated platform that provides access to a wide choice of managerial, technical and behavioural courses from world-class institutes, through a user-friendly interface. It was custom made for CIDCO by NIUA’s web development unit and launched on 5th July 2017. It can be accessed at https://cidco-smartcity.niua.org/ujjwal.

The portal is built upon three primary datasets:

- **Existing Employee as per SAP**: This data includes phone number, email address, age, experience, designation, cadre and reporting officer.

- **Institutes**: A list of partner institutes who offer relevant trainings. This includes location of the institute and details for the contact person.

- **Courses**: A list of courses offered by partner institutes and organisations that CIDCO officers can apply to participate in. This includes details about the course such as course description, intended audience, start and end date, registration deadline and fees.

NIUA-CIDCO Smart City Lab is currently working to integrate Ujjwal with CIDCO’s SAP system in order to allow real-time updates to the employee database, accounting for all new hires, promotions, retirements, etc.

Since its launch, the portal has already registered 137 visitors within the first three weeks of its launch. At the time of publication of this Newsletter, participation of 77 officers have registered their interest in training through the portal, out of which, 37 trainings have been already approved for 56 CIDCO officers. As of 31 July, 2017, 13 CIDCO officers would have completed participation in 9 trainings.

1 Approved vide B.R no. 11818 dt. 24.03.2017
Training Through Ujjwal

As a one-stop shop, Ujjwal allows the CIDCO officers to view, select, apply, and track their participation and progress in various trainings. This process is facilitated by the Ujjwal Training Cell that is located within the planning department at CIDCO Bhavan in Navi Mumbai.

**Course:** A program offered by an institute that an Officer can apply for through Ujjwal.

**Training:** Training is the process of selection and participation in a course by an Officer, facilitated by the Training cell through Ujjwal.

**Typology:** There are three kinds of courses available through Ujjwal:
- Managerial trainings are related to effective management of projects and people including need for improved knowledge and skills on project management, strategic decision making, financial management, crisis management, conflict management, risk assessment, etc.
- Technical trainings are specific to the functions and needs of the departments of the organisation.
- Behavioural trainings are related to improving one’s own productivity and sense of achievement and personal growth through self-improvement courses.

**STEP 1: Log-in**
Every Class I & Class II Officer is given access to the portal through a link that is shared over an email and a password that is sent in an SMS text as shown in the images.

**STEP 2: Visit the Dashboard**
Upon logging in, officers can see their personalised Dashboard. It allows them to see their participation eligibility and the completed, ongoing and upcoming trainings.
STEP 3: Update and Confirm Details
Officers can review their personal and employee information from the Edit Profile page. They can change their password, verify/select their Reporting Officer, and report an issue if their Reporting Officer is not visible in the provided list.

Change Password

Change Email Address

Select/Verify Reporting Officer
STEP 4: Add Trainings
Officers can select three courses that they are interested to participate in using the selection tool in order of their preference – Priority I, II & III. Out of these three, their participation will be confirmed for one, based on their preference and the availability of seats.

To select a course, officers will need to first select a Typology:
Next, they can choose a course. These courses can also be sorted by month using the Calendar filter. Before moving further, officers should confirm their availability on the dates on which the course is being offered.
Officers can also click on the View Course Details button to read more about the course.

Once satisfied with the course, officers can click the Select Course button to add the course to their selection.
Officers can review their selection once again by clicking on the selection.

Clicking on the Training to review details.

Review the details of the Course.
If officers wish to change the training, they can click on the Remove button to clear the selection.

Once three courses of choice have been selected, officers have to click the Freeze button to add their selection as Trainings.

Once the Freeze button is clicked, the courses will be added as Trainings into the system and the Training Coordinator will receive an email update informing them of the selection. After pressing the Freeze button the officers cannot make any changes to their selection.
**STEP 5: Check Stages**
Once the courses are added as trainings, the Training Coordinator in the Ujjwal Training Cell will review their selection and approve or reject their enrollment based on availability of seats. Officers can track this process through the Check Stages page. If a course is not approved for participation, a rejection notification will be visible.

As per CIDCO policy, officers cannot withdraw from participation in a Training once it has been approved.

Following are the stages that will be visible through the Check Stage for each training once it is approved:

- Approval of participation that confirms enrollment. Officers should immediately reach out to the training coordinator to discuss the next steps.
- Confirmation of payment once the payment for the course is made to the institute.
- Completion of participation on the day the training ends.
- Completion of training upon submission of Feedback Form, Proof of Participation
STEP 6: Feedback Form and Proof of Participation

Feedback Form

Proof of Participation

Contact Training Co-ordinator
A training is considered complete only when the Feedback Form and Proof of Participation are submitted through the portal. Upon completion, officers may apply for another training after a cooling off period of six months.

The cost of participation in the trainings along with associated travel and accommodation expenses will be borne by CIDCO (as per CIDCO’s existing policy). Management of any logistics for travel required for participation in these trainings is to be arranged by the participating officers themselves.

Ujjwal is a unique system implemented by CIDCO for knowledge enhancement of its officers. As a new system, it continues to evolve by learning from the experiences of all its users. Thus, it is essential that suggestions and questions are brought to the notice of the Ujjwal Training Cell. Officers can use the Contact Training Cell page for this, or write to the Training Cell at trainingcidco@niua.org. The Training Cell is located within CIDCO Bhavan on the fourth floor in the Planning Department.
How to use the training portal

Log in to the Portal

Update Profile
- Employee’s Mobile Number
- Employee’s Email Address
- Employee’s Reporting Officer

Prioritize Courses
- Choose from one or more Typology:
  - Technical
  - Managerial
  - Behavioral

Enrolment Done

Look for the Communication from NIUA Training Cell

Freeze Courses

Get your Travel Bookings Done

Happy Learning

Submit
- Certificate of Participation
- Training Feedback form
- Notes

Happy Learning
## Training Policy Eligibility Matrix

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<th>Designation</th>
<th>Field Officer</th>
<th>Additional Development Officer</th>
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<tr>
<td><strong>Online</strong></td>
<td>1 course mandatory every 3 years</td>
<td>1 course mandatory every 3 years</td>
<td>Eligible for 1 in first 2 years for Entry level officers</td>
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<tr>
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<td>Age: 57 Years or less</td>
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<td>5 days mandatory every 2 years</td>
<td>5 days mandatory every 2 years</td>
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<tr>
<td></td>
<td>Eligible for up to 15 days every 3 years</td>
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<tr>
<td><strong>National Seminar/Conference/Workshop</strong></td>
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<tr>
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<td>Preference: 5 days of Residential Training 2 Online Courses in 5 Years</td>
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<td>Workshop Age: 57 Years or less</td>
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- **Mandatory**
- **Conditional**
- **Voluntary**
- **Ineligible**
Kochi Metro – Kudumbasree, Partners for Inclusive Planning

Kochi Metro is the newest implemented mass rapid transit system in the country. Its construction began in June 2013 and a 13.4 km long section on the line between Aluva and Palarivattom was inaugurated on 17th June 2017. A second 5 km stretch between Palarivattom and Maharaja’s College is slated to open in August 2017. Kochi Metro is also working to make the system socially inclusive by working with Kudumbasree. Together, they are working to hire women and transgender individuals in the operational management of the metro system.

Kudumbasree is a community organisation of Neighbourhood Groups (NHGs) of women in Kerala. It has been recognised as an effective strategy for the empowerment of women in rural as well as urban areas (Krishnakumar, 2015). The mission of Kudumbasree is “to eradicate absolute poverty in ten years through concerted community action under the leadership of local governments, by facilitating organisation of the poor for combining self-help with demand-led convergence of available services and resources to tackle the multiple dimensions and manifestations of poverty, holistically”. There are several strategies undertaken by the organisation to achieve its mission, which include formation of women collectives, skill upgrade training, provision of better living conditions - infrastructural facilities, micro-enterprises for sustainable economic development, etc.

Last year, KMRL signed a Memorandum of Understanding with Kudumbasree for the management of its station premises including ticketing, customer relations, housekeeping, parking management and running the canteens of KMRL. The MoU was signed in the presence of Kerala Chief Minister Pinarayi Vijayan and minister for Local Self Government K T Jaleel during the Chief Minister’s visit to KMRL office for reviewing the project (PTI, 2016).

Two major initiatives taken by the Kochi Metro, which makes it unique are:

- This is the first time a government-owned organisation in the country has formally appointed twenty three transgender persons (John & Das, 2017).
- Kochi metro will have more women employees; it will be a women run metro.

People will be hired on an experimental basis after a security screening by police and the women employees appointed will be given special training by the police. On the decision of including transgender, Elias George, KMRL Managing Director said, “Transgenders face lot of difficulties. They are forced into undesirable occupations. So as an experiment, we have developed an idea to rehabilitate them. Under Kudumbasree itself, we have planned to employ transgender in Kochi metro. We know that our experiment will be a success,” Mr. George reaffirmed that if this experiment turns out to be a success, they would incorporate the same for the water metro project (Ashtputre, 2016).

Kerala government has previously worked on social inclusion of transgender community. Last year, Kerala unveiled a Transgender Policy, with the view towards protecting the rights of transgender and ending the stigma towards the community. The idea behind the policy is to ensure that transgender have equal access to social and economic opportunities, resources and services, and right to live life without violence (Singh, 2016).
Smart City Plan: Columbus, Ohio

Background
US DOT’s Smart City Challenge aims to help cities begin to address the challenges the trends identified in the Beyond Traffic report published by the U.S. Department of Transportation (U.S. Department of Transportation, n.d.). As part of the challenge, 78 medium-sized cities shared their best and most creative ideas for innovatively addressing the challenges they face. USDOT committed $40 million for one city to demonstrate how advanced data and intelligent transportation systems (ITS) technologies and applications can be used to reduce congestion, keep travellers safe, protect the environment, respond to climate change, connect underserved communities, and support economic vitality (U.S. Department of Transportation, n.d.). In June 2016, Columbus was selected as the winner of the Smart City Challenge. Columbus proposed to reshape its transportation system to become part of a fully integrated city that leverages data and technology with an aim of efficiently moving people and good (U.S. Department of Transportation, n.d.). Columbus has grown consistently over time and it continues to become more diverse with growing African-American, Latino and Asian populations. The city has a young working population with a median age of 32 years which is lower than the state (39) and the nation (37) (Bureau of Labor Statistics, 2017) and has a lower unemployment rate of 3.4% (U.S. Census, 2015). Columbus has a strong and diverse economy, driven by education, healthcare and social assistance services. It is also the fastest growing metro area in the Midwest, the top metro for job growth in the Midwest, and the top metro for wage growth in the U.S. The city recognises these credentials and aims to leverage them to make the City of Columbus- A city of opportunities (Ginther, 2016).

The Winner - Columbus, Ohio
Ohio’s capital Columbus is the largest city in the state and the 15th largest city in the country with a population of 860,090 (US Census, 2016). It is relatively dense for a mid-sized American city. It has a density of about 3800 inhabitants per square mile (around 1500 persons per square km). It serves as a strong regional anchor with 39% of the Metropolitan Area population living in the city. Columbus has grown consistently over time and it continues to become more diverse with growing African-American, Latino and Asian populations. The city has a young working population with a median age of 32 years which is lower than the state (39) and the nation (37) (Bureau of Labor Statistics, 2017) and has a lower unemployment rate of 3.4% (U.S. Census, 2015). Columbus has a strong and diverse economy, driven by education, healthcare and social assistance services. It is also the fastest growing metro area in the Midwest, the top metro for job growth in the Midwest, and the top metro for wage growth in the U.S. The city recognises these credentials and aims to leverage them to make the City of Columbus- A city of opportunities (Ginther, 2016).

Columbus Smart City Vision
With its immense potential and resources, Columbus is striving to become a successful smart city by responding to four primary issues:

- An aging population;
- A growing younger population that is moving to the dense urban areas;
- Mobility challenges in select neighbourhoods; and
- A growing economy and population with related housing and commercial, passenger and freight, and environmental issues.

“Columbus won the Smart City Challenge because of Mayor Ginther’s leadership and because the central Ohio community united to develop innovative solutions to address community challenges.”

- Sherrod Brown (D-OH)
Its vision is to become a community that provides beauty, prosperity and health for all of its citizens (Ginther, 2016). It plans to achieve its vision by:

1. Leveraging a new central connected traffic signal and integrated transportation data system to develop a suite of applications to deliver enhanced human services to residents and visitors.
2. Integrating electronic appointments and scheduling platform for doctor visits with transit tracking so that rescheduling becomes automated and expecting mothers do not have to wait weeks to reschedule appointments. These applications include a multi-modal trip planning application, a common payment system for all transportation modes, a smartphone application for assistance to persons with disabilities, and integration of travel options at key locations for visitors.
3. Establishing a smart corridor connecting underserved neighborhoods to jobs and services. The smart corridor will enhance Bus Rapid Transit (BRT) service by installing smart traffic signals, smart street lighting, traveler information and payment kiosks, and free public Wi-Fi along the route. Further, six electric, accessible, autonomous vehicles will be deployed to expand the reach of the BRT system to additional retail and employment centers (U.S. Department of Transportation, n.d.).

Smart City plan for Columbus adopts Transit Oriented Development (TOD) as an approach for managing city’s transportation. Mayor Andrew J. Ginther understands the connection between city’s transportation and the livelihood of the people. He believes that “Transportation is not just about roads, transit and ride sharing. It is about how people access opportunity. And how they live”. (Smart Columbus, n.d.) Globally, many cities are appreciating and adopting TOD approach to build more liveable cities. In fact, after focused efforts to dovetail infrastructure and technology through its AMRUT and Smart Cities programs, the Government of India is now turning its attention Transit-Oriented Development (TOD). It has also recently adopted a national TOD policy that will support the transformation process already underway in most of the Indian cities. This transformation will attract lot of investments to the respective cities, and vastly increase their ‘liveability’ in a sustainable manner.

Highlights of the proposal
There are four foundational plans, which will allow the city to identify and overcome the challenges for achieving its desired goals (Ginther, 2016).

1. Connect Columbus: Connect Columbus is the City’s Multimodal Thoroughfare Plan which provides a long-range vision and priority investments for transportation plan in the City. The plan aims designed to improve safety, reduce congestion, assist children, the elderly, and people with ADA needs and promote economic development, fitness and environmental responsibility.
2. Insight 2050: Mid-Ohio Regional Planning Commission (MORPC), the metropolitan planning organisation for Columbus, leads Insight 2050. It is a collaborative initiative among public and private partners designed to help Central Ohio proactively plan for growth and development. Insight 2050 provides scenario testing tools and data to help decision makers understand the impact of future land use policies and the transportation investments.
3. 2016-2040 Metropolitan Transportation Plan: As the region continues to grow and funding availability becomes scarce, the region is prepared with innovative transportation solutions to address grown infrastructure demand. The Metropolitan Transportation Plan is the federally mandated long-range planning document led by MORPC that brings together local governments from around Central Ohio and other local, state, and federal agencies to identify and coordinate transportation goals, policies, strategies and projects over the next two decades.
4. NextGen Plan: The NextGen Plan is the Central Ohio Transit Authority’s (COTA) long-range planning effort to identify transit needs and opportunities for 2025, 2040 and 2050. The initiative will recommend system enhancements, including a prioritized list of bus and rail projects along with what technology to employ. COTA will comprehensively realign its network to better fulfill the needs of the growing community.

Columbus has outperformed a number of other deserving cities, which were far more technologically advanced and financially stronger, because:

1. The proposal provided a path for growth beyond the initial applications through its clearly defined vision and goals (McGregor, 2016).
2. Its focus on improving the health and lives of the community by reducing poverty and infant mortality with the application of technology (Hawkins, 2016).
3. The ability of the city to rope in local partners as well as prominent tech-based companies to help in achieving the goals set for smarter Columbus (Chieppo, 2016).

Key points of comparison with Indian Smart Cities
The greatest difference between cities participating in the Smart City Challenge in the United States and those participating in the Indian Smart Cities Mission is the level of existing infrastructure. Columbus additionally illustrates a strong commitment to the sharing economy and has a foundation for providing open, accessible data that enables other stakeholders to develop solutions for the greater good. This is also evident from the city’s investment in policy and regulatory changes that encourage bike sharing (GoGo) and car sharing (Car2Go, Uber) services. The city also has a working MyColumbus app that enables citizens to access (Ginther, 2016):
- City services
- Publicly accessible transit routes, schedules, and stop data
- MORPC Regional Data Lab portal that provides access to transportation, housing, and other public information available around the region
- State-wide accessible travel-time data

Indian cities, on the other hand, have taken up a bigger challenge of leap-frogging development. As seen through the new urban agenda and its initiatives, Indian Smart Cities are bridging the existing service delivery gaps while embedding “smartness” into the system in the process.
Columbus' Smart City Plan also successfully leverages about 10 times the initial government grant by building partnership with the private sector. A review of the finances from the first 33 cities shows an average funding leverage of 1.18, with a maximum of 5.29 in case of Indore and a value less than 1 for more than half the cities. However, with the growing focus on engaging with private partners (as seen under the smart cities mission) and the adoption of the country's first value capture finance policy framework in February 2017, Indian cities are now set to find more opportunities for leveraging finances from alternative sources.

Some of the Indian cities are already demonstrating steps in this direction through the implementation of global best practices. An example of this is the city of Pune. Under the Smart Cities Mission, it is collaborating with Google, L&T and other technology firms to provide Wi-Fi connectivity at around 200 strategic locations in the city (Press Trust of India, 2017). Under the contract, Google will help monetise the city Wi-Fi network, and will deploy Google Station platform, which has Wi-Fi network management capability, and focuses on monetisation to make Wi-Fi self-sustainable. RailTel, on the other hand, will provide last-mile fibre connectivity on need basis to enable Wi-Fi hotspots at around 200 strategic locations across the city (Khan, 2017).

With the support of national level initiatives such as the Smart City Mission, AMRUT among others, cities are working towards efficient and fast project through a collaboration of urban local bodies, state agencies, and local partners including NGOs, educational institutions and community. As Ohio implements its Smart City Plan, there is an opportunity to observe and benefit from the challenges they face and to aid leap-frogging the development in Indian cities.
On June 23, 2017, the Ministry of Urban Development announced the selection of 30 cities under Round III of the National Smart Cities Mission, bringing the total number of cities selected in the mission to 90. The remaining 10 cities have an opportunity to revise their smart city proposals and resubmit in order to ensure feasible plans.

The announcement of cities selected in Round III was followed by the launch of City Liveability Index. The ‘City Liveability Index’ will be used to measure the quality of life in 116 major cities including smart cities, capital cities and cities with a population of above one million each. The Index will be used to create a ranking framework for all cities, facilitating a competitive environment by ranking them on 79 parameters (57 Core parameters and 22 Supporting parameters). These parameters are based on the 24 features contained in the Smart City Proposals (SCPs), which have been grouped into 15 thematic categories and also forms a part of the four pillars of comprehensive development of cities - Physical, Social, Institutional and Economic. Purpose of these parameters is to indicate a city’s success and efficiency: grievance redressal, pollution mitigation, provision of water and electricity, online citizen services, upkeep of historical buildings, increase in tourist footfalls, crime rate, extent of crimes recorded against women, children and elderly, availability of traffic surveillance system and education.

During the launch of the City Liveability Index, a companion document named ‘Methodology for Collection and Computation of Liveability Standards in Cities’ was also released. It is meant to be the guiding document for data collection, analysis and calculation of various scores for the different parameters.

Liveability Index is a weighted aggregate of scores on Physical, Institutional, Social and Economic parameters. This index will act as a Common Minimum Reference Framework to enable the cities to know where they stand in terms of quality of life and the interventions required to improve the same.
Introduction to Instructional Design

For the management of any organisation, the objective of providing training to its employees is to bring about a change and development that makes them more efficient at their job. Elaborate planning and arrangement of instruction is important for ensuring quality in this education. Instructional design leads the way in accomplishing this goal through better, more effective teaching (Göksu, Özcan, Çakir, & Göktas, 2017).

Instructional design can be defined as a systematic method that (a) covers such stages of the teaching process as analysis, design, development, evaluation, and management; (b) is based on instructional and learning theories; and (c) enhances the quality of teaching (Göksu, Özcan, Çakir, & Göktas, 2017; Dick, Carey, & Carey, 2001; Dooley, 2005). It aims for a learner-centered approach rather than the traditional teacher-centered approach to instruction for effective learning. This means that every component of the instruction is governed by the learning outcomes, which have been determined after a thorough analysis of the audience/learners’ needs (McGriff, 2000).

Most instructional design models are built upon the ADDIE model created by the Center for Educational Technology at Florida State University for the U.S. Army (Göksu, Özcan, Çakir, & Göktas, 2017; Branson, et al., 1975; Dooley, 2005; Hoogveld, Paas, Jochems, & Merriënboer, 2002; Zheng & Smaldino, 2003). ADDIE stands for Analysis, Design, Development, Implementation and Evaluation. It is a cyclical model used in design and delivery of trainings/learning modules.

ADDIE is linear in nature and as a result its implementation can become comparatively lengthy and costly, however, its dynamic and flexible nature makes it a popular approach for development of instructional material (Welty, 2007). It is often employed for compliance training and other learning events that are not time sensitive. However, there are modified versions of ADDIE that are more dynamic and interactive. Rapid prototyping (continual feedback) has sometimes been cited as a way to improve the generic ADDIE model.

The ADDIE Model

The different phases of the ADDIE process—Analysis, Design, Development, Implementation, and Evaluation—provide a roadmap for the entire instructional design process.

Analysis: This stage includes identification of the learning problems, goals, objectives, participant’s needs and their existing knowledge and skills. It is done taking into account the learning environment, delivery options, project timeline and any other relevant constraints. The output of Analysis phase is the input for the Design phase.

Design: The primary goal of this stage is to translate the goals of the course defined in the Analysis phase into performance outcomes and course objectives. This includes specification of learning objectives, development of detailed storyboards, prototypes, content and presentation methods.

Development: The purpose of this phase is to generate lesson plans and lesson materials. This includes the actual creation (production) of the content and based on the output of the Design phase (McGriff, 2000). It involves preparation of draft material and activities, their testing and revision and preparation of training material as per requirement.

Implementation: This is the phase where the actual delivery of the training takes place through a given medium. Purpose of this phase is the effective and efficient delivery of instruction. This phase must promote the audiences’ understanding of material, support their mastery of objectives, ensuring transfer of knowledge from the instructional setting to the job (McGriff, 2000).

Evaluation: This is the phase where the effectiveness and efficiency of the instruction is measured. Evaluation can be of two types: Formative and Summative. Formative Evaluation is conducted during and in between the different phases of the ADDIE model. Its purpose is to improve the learning/training module before the final version is delivered. Summative Evaluation occurs after the final version of learning/training...
module is delivered. It assesses the overall effectiveness of the module. Data from this phase is used to make decision about the module (McGriff, 2000).

Over years, practitioners have developed customised versions to suit the specific trainings/learning needs. This includes PADDIE + M, where the P stands for planning and M stands for Maintenance, and ADDIE+M, where M stands for Maintenance of the Learning Community Network after the end of a course.

Today, the influence of the ADDIE can be seen on most Instructional Design models being used. ADDIE’s success is a result of its flexibility, simplicity and efficiency. Its iterative nature allows consistency within the model and opportunity for improvement until the learning needs are met, ensuring a robust training/learning module.

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<tr>
<th>Course Title</th>
<th>Institute</th>
<th>Registration Deadline</th>
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<td>Seminar on Women Employee Safety and Self Defence</td>
<td>Bombay Chamber of Commerce</td>
<td>03/08/2017</td>
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<td>Swachh Bharat Mission- Need, importance and provisions (junior officials)</td>
<td>Regional Centre for Urban and Environmental Studies</td>
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<td>Fundamental Contracts Management for Project Success</td>
<td>Centre for Professional Development</td>
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<td>Creating change makers: Training programme for new age women professionals</td>
<td>Administrative Staff College of India</td>
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<td>Design, construction and maintenance of flexible payments</td>
<td>CSIR - Central Road research Institute</td>
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<td>Essentials of Enterprise Risk Management</td>
<td>Tata Management Training Centre</td>
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<td>Data Analytics &amp; Internal Audit</td>
<td>Institute of Government Accounts and Finance</td>
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<td>Climate Resilient Smart Cities</td>
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<td>Concrete mix proportioning and acceptance criteria of concrete for different types of mixes</td>
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<td>A Spreadsheet and Statistical approach for Business Analysis and Optimisation</td>
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Zheng, L., & Smaldino, S. (2003). Key Instructional Design Elements for Distance Education. Quarterly Review of Distance Education, 153-166.