



UNITED ARAB EMIRATES  
MINISTRY OF ECONOMY

# INVESTING IN SMART CITIES AND MOBILITY IN THE UAE



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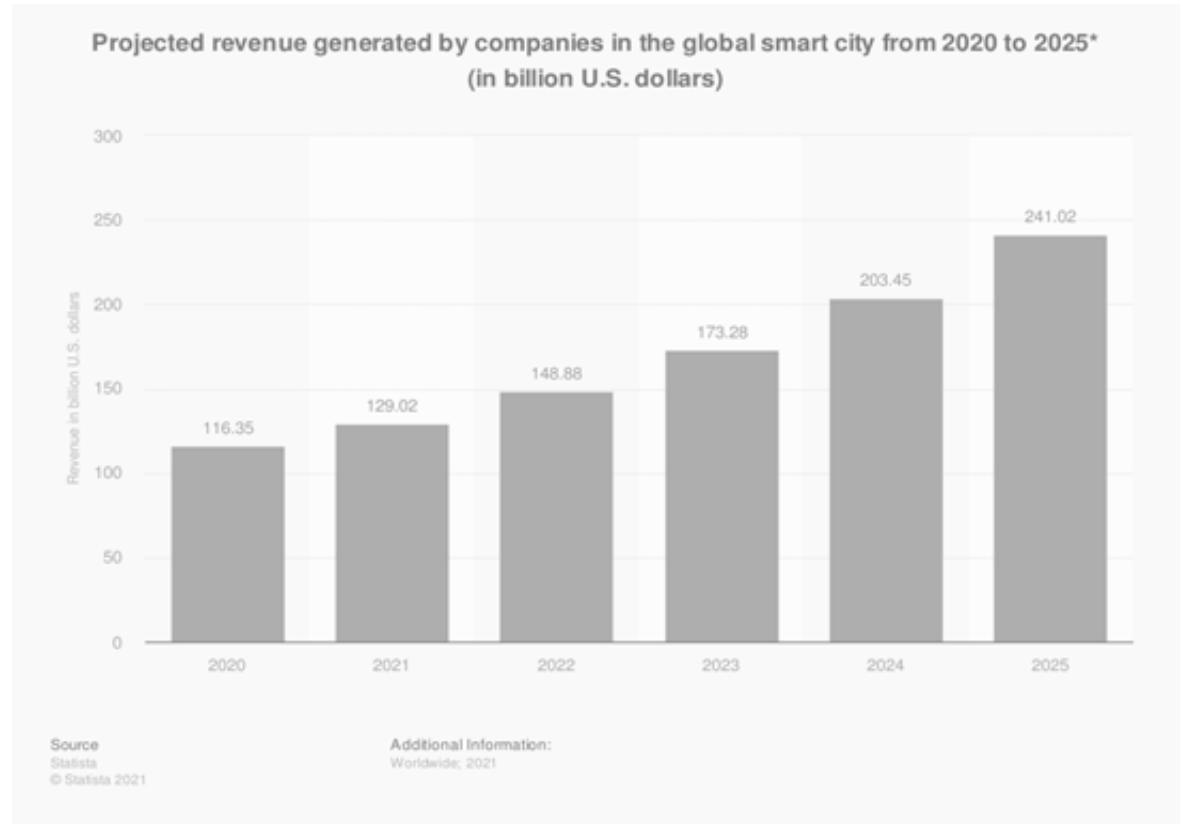
❖ Key government stakeholders and industry associations in the UAE Smart Cities and Mobility Industry

# THE SMART CITIES AND MOBILITY SECTOR CONSISTS OF SEVERAL SEGMENTS

Smart Mobility	Smart Safety	Smart Energy, Water & Waste	Smart Buildings & Living
<p>Smart mobility refers to many modes of transport. Some smart mobility services include: public transport Carsharing Mobility as a service Mobility on Demand autonomous transport systems smart mobility services in freight and logistics drones and low-altitude aerial mobility.</p>	<p>Smart safety refers to methods and technologies that improve public safety.</p>	<p>Smart energy, water, and waste refers to a movement in these industries involving emerging technology that includes hardware, software, and analytics to help solve problems through automation, data gathering and data analysis.</p>	<p>A smart building is one that uses technology to enable efficient and economical use of resources, while creating a safe and comfortable environment for occupants. They may use a range of existing technologies and are designed to allow for the integration of future technological developments.</p>

# GLOBAL SMART CITIES AND MOBILITY INDUSTRY OVERVIEW

- The Global Smart Cities Market is anticipated to grow from **USD 457 billion in 2021** to **USD 873.7 billion by 2026**, at a Compound Annual Growth Rate (CAGR) of **13.8%** during the forecast period.
- The Global Mobility as a service market is projected to reach **USD 40.1 billion by 2030** from an estimated **USD 3.3 billion in 2021**, at a CAGR of **32.1%** from 2021 to 2030.
- According to the European Commission, the Smart Cities project market is expected to **exceed USD 2 trillion by 2025**.
- The global Smart Water market was valued at **USD 4.91 billion in 2020**, and is projected to reach **USD 9.73 billion by 2030**, growing at a CAGR of **7.5%** from 2021 to 2030.
- The global Smart Waste Management market size was valued at **USD 1.68 billion in 2019**, and is expected to reach **USD 4.10 billion by 2027**, registering a CAGR of **15.1%** from 2020 to 2027.
- The Smart Building market was valued at **USD 82.55 billion in 2020** and is expected to reach **USD 229.10 billion by 2026** at a CAGR of over **11.33%** over the forecast period of 2021 to 2026.



Source: Research and Markets, Allied Market Research

# GLOBAL SMART CITIES AND MOBILITY INDUSTRY FUTURE TRENDS

## Green planning of public spaces

- Cities need to be planned and designed for people, with 'green' streets, new corridors and public spaces as centres of social life.
- Cities should be driving a decarbonisation agenda.
- Includes initiatives such as a larger number of trees, the creation of more and larger public parks and nature-based solutions in the urban environment, and more walking and cycling facilities instead of car-centric designs and parking areas.

## The 15-minute city

- Cities are being designed so that amenities and most services are within a 15-minute walking or cycling distance, creating a new neighbourhood approach.
- The rezoning model will gain further traction in the future, boosted during the COVID-19 disruption, by new ways of working that require less transport.

## Smart health communities in the cities

- Cities are developing health care ecosystems that are not only focused on diagnosing and treating sickness but also on supporting well-being through early intervention and prevention, leveraging digital technologies.
- As care moves outside of the hospital walls new community players and disruptors will become critical in forming the new ecosystem.
- While privacy is a concern, investment in smart public health initiatives generates substantial return on investment for cities while improving public health and well-being.

## Mobility: intelligent, sustainable and as-a-service

- Cities are working towards offering digital, clean, intelligent, autonomous and intermodal mobility, with more walking and cycling spaces, where transport is commonly provided as a service.
- The trend will accelerate further in the next decade, with electrification, autonomous driving, smart and connected infrastructure, modal diversity, and mobility that is integrated, resilient, shared and sustainable



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# SMART CITIES AND MOBILITY GROWTH ENVIRONMENT IN THE UAE

The UAE is leading innovation in the world's Smart Cities market industry experts have announced at GITEX Technology Week 2020.

- **Abu Dhabi and Dubai rank in the world's top 50 Smart Cities**, thanks to measures such as the digital transformation of the government, Smart Dubai initiatives, and Expo 2020 Dubai as one of the world's best connected events.
- **Abu Dhabi and Dubai have been ranked as the smartest cities in the Middle East and North Africa region in the 'Smart City Index 2021'** by the Institute for Management Development (IMD) and Singapore University for Technology and Design (SUTD).
- While **Abu Dhabi is ranked 28, Dubai is closely behind at 29**, out of 118 cities in the 'Smart City Index 2021'. Compared to 2020, both the emirates **climbed up 14 places** globally.
- Dubai remains highly progressive in its vision of automated vehicles and smart mobility initiatives, with its **plan to transform 25% of its total transportation to autonomous modes by 2030**.
- Projects such as the Bluewaters Group Rapid Transit and the introduction of autonomous aerial vehicles will serve as **benchmarks for future automated vehicles projects throughout the Middle East**.
- To attract autonomous driving firms to the U.A.E., the Emirati government plans to hand out data to autonomous car startups, which could incentivize them to come to the U.A.E.



Source: UAE Government Portal, Messe Frankfurt

# INITIATIVES FOR THE GROWTH OF SMART CITIES AND MOBILITY IN THE UAE

## UAE National Smart Mobility Strategy

- The National Artificial Intelligence Strategy 2031 aims at positioning the UAE as a global leader in artificial intelligence by 2031, and to develop an integrated system that employs artificial intelligence in vital areas in the UAE.
- The National Artificial Intelligence Strategy 2031 includes eight strategic objectives, a number of initiatives, along with a number of initiatives aimed at employing artificial intelligence in vital areas such as education, government services and the community wellbeing.
- The strategy also includes a plan to build a well-established UAE brand of artificial intelligence through artificial intelligence activities that will make the UAE a test platform for artificial intelligence technology, provide enhanced services with advanced technology, training and qualification programmes, talent building, research, data development and governance.



UNITED ARAB EMIRATES  
MINISTRY OF INFRASTRUCTURE  
DEVELOPMENT

## Smart Cities & Artificial Intelligence Plan (2018-2022)

- The five-year Smart Cities & Artificial Intelligence Plan (2018-2022), otherwise referred to as the Zayed Smart City Project, is a project in smart cities for managing infrastructure using Information & Internet of Things Technology.
- The project aims to envision the future, activate the innovation system and establish a world-class infrastructure to enhance the quality of life in the emirate of Abu Dhabi.
- Zayed Smart City Project encompasses a range of smart Apps to manage infrastructure through the Internet of Things (IoT), the first of its kind worldwide. It includes 10 integrated infrastructure applications, all managed on a single smart 3D platform.



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AND MUNICIPALITIES



# INITIATIVES FOR THE GROWTH OF SMART CITIES AND MOBILITY IN THE UAE

## Smart Dubai 2021 Strategy

- The Smart Dubai City strategy 2021 calls for a data-driven government, where data will be used as a strategic asset to the benefit of the public, as well as the government itself.
- The strategy features six key pillars and 100 initiatives on transport, communications, infrastructure, electricity, economic services, urban planning. Under the strategy, 1000 government services will go smart in the next three years.



## Fourth Industrial Revolution (4IR) Strategy

- The Fourth Industrial Revolution Strategy aims to strengthen the UAE's position as a global hub for the Fourth Industrial Revolution and to increase its contribution to the national economy by means of advancing innovation and future technologies.
- It also aims to position the UAE as a global model in adopting leading-edge technologies to serve society and achieve happiness and sustainability.
- Some strategic areas for the strategy include: augmented education, personalized medicine, connected care, space data, advance defence manufacturing, and intelligent cities.



# INITIATIVES FOR THE GROWTH OF SMART CITIES AND MOBILITY IN THE UAE

## Etisalat 6G Plan

- Etisalat has said it has taken considerable efforts towards 6G realisation by “conducting research and developing international standards that are the main building blocks for the 6G ecosystem”.
- While the realization of 6G technology is estimated 7-8 years away, Etisalat remains committed to bringing the latest technologies to UAE market to enable digital societies.
- The 6G technology requires agile communications governance and increased collaboration across multisector stakeholders. The technology is seen as an enabler of new coverage dimensions in space and maritime in addition to the terrestrial dimension



# SMART CITIES AND MOBILITY PROJECTS IN THE UAE

## RTA Initiatives

- **Self Driving Taxis:** Flying taxis are an important advancement in air transportation underway in the UAE. Volocopter, a German company at the forefront of researching and developing flying taxis with the goal of making urban air mobility much easier and more advanced, recently signed a deal with the RTA. Under this deal, Volocopter will launch its flying taxi capable of carrying two passengers in Dubai as soon as the technology is ready.
- **Sky Pods:** The sky pods system designed by UK based firm BeemCar is set to connect the city's homes and businesses with its metro network. In February of 2020, BeemCar and Dubai's RTA signed a memorandum of understanding to develop this technology for Dubai.
- **SkyWay:** SkyWay Dubai is a new mode of transportation being developed that will carry passengers and freight on a specially designed elevated string-rail overpass between different skyscrapers in Dubai.

هيئة الطرق والمواصلات  
ROADS & TRANSPORT AUTHORITY



## Virgin Hyperloop

- Transporting passengers and goods at speeds exceeding 1,000km/h, hyperloop is a completely new form of transport with the ambition to become the most sustainable means of mass transportation.
- The hyperloop concept promises travel times between Dubai and Abu Dhabi into 12 minutes rather than the current hour or longer.
- In addition to its speed, Hyperloop is 5-10 times more energy efficient than a commercial airliner.



**DP WORLD**

Source UAE Portal



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# ECO SYSTEM COMPONENTS – INSTITUTIONAL FRAMEWORK



- The **Smart Cities Association** is a non-profit organization founded by a community and industry experts among its members and partners platform who are committed for its growing strategy and development mission.
- The Smart Cities Association mission is to promote the smart cities roadmap and reference model through collaboration towards a truly digital and smart city transformation.



- **Centre of Digital Innovation (CoDI)** is an initiative launched by the Telecommunications and Digital Government Regulatory Authority-TDRA in the UAE in late 2013 as a response to the UAE's attempt towards being a smarter and digitally transformed nation.
- CoDI does various capacity-building, research and development activities resulting in high-quality products and services in the area of ICT. CoDI has established an ecosystem of partners and stakeholders from different sectors.

# INCUBATORS AND ACCELERATORS



- With the vision to support Dubai's 2021 strategy of becoming the smartest city in the world, the MENA region's first Dubai Smart City Accelerator was launched in May 2017 by Dubai Silicon Oasis (DSO).
- The programme targets startups that are developing innovative solutions to help make cities smarter and overcome significant challenges due to congestion, waste, and energy to improve the quality of people's lives.
- It will focus on projects that provide solutions to everyday challenges, built around smart buildings, transportation, intelligent logistics, smart lifestyles and smart planning & maintenance.



- in5 is an enabling platform for entrepreneurs and start-ups, offering five key benefits through its robust start-up framework, creative spaces and specialised industry centres, training and mentorship programmes, community-wide networking events and access to investors.
- in5 nurtures ideas and businesses to their next phase of growth.



- Bedayat was launched in 2019 as part of an initiative by Sustainable City in Dubai to develop small-medium enterprises.
- Like other Dubai-based incubators, Bedayat provides training sessions and opportunities to meet business experts while enabling budding entrepreneurs to access facilities to conduct research, and test their products and services before going to market.

# LEADING SMART CITIES AND MOBILITY COMPANIES IN THE UAE

Illustrative, non exhaustive



# EVENTS BY THE UAE GOVERNMENT IN SMART CITIES AND MOBILITY

Illustrative, non exhaustive



- GITEX is an annual consumer computer and electronics trade show, exhibition, and conference that takes place in Dubai. The events covers markets such as AI, 5G, Cloud, BigData, Cybersecurity, Blockchain, Quantum Computing, immersive Marketing, and Fintech.



- Smart Cities World Expo aims to educate people towards smart cities and urban planning technologies, strive for innovation, promote innovative business solutions, and connect thousands of attendees from around the globe.



- The EcoWASTE Exhibition and Forum is dedicated to advancing new business opportunities and best practices for sustainable waste management. The event offers practical solutions to reduce waste, with a focus on the region's effort to curb its plastic and industry waste, while also looking at long-term solutions for creating circular economies.





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# SMART CITIES AND MOBILITY SECTOR GOVERNANCE



UNITED ARAB EMIRATES  
MINISTER OF STATE FOR ARTIFICIAL INTELLIGENCE,  
DIGITAL ECONOMY & REMOTE WORK APPLICATIONS OFFICE

<https://ai.gov.ae/>

- His Excellency Omar Sultan Al Olama has been appointed as Minister of State for Artificial Intelligence in October 2017, and then was appointed as Minister of State for Artificial Intelligence, Digital Economy and Remote Work Applications in July 2020.
- His responsibilities include enhancing the government performance levels by investing in the latest technologies and tools of artificial intelligence and applying them in various sectors.



UNITED ARAB EMIRATES  
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& ADVANCED TECHNOLOGY

<https://moiat.gov.ae/en/>

- Established in July 2020, the Ministry of Industry and Advanced Technology (MoIAT) aims to boost the UAE's industrial sector and increase its contribution to the GDP.
- The Office of the Minister of State for Advanced Technology, the Emirates Authority for Standardization and Metrology (ESMA) and the Industry sector in the Ministry of Energy and Infrastructure have been merged into the structure of the Ministry of Industry and Advanced Technology since then, and all authorities, responsibilities and duties have been transferred to the newly founded Ministry.

# SMART CITIES AND MOBILITY SECTOR GOVERNANCE



<https://tdra.gov.ae/>

- The Telecommunications and Digital Government Regulatory Authority is the federal telecommunications regulatory agency of the United Arab Emirates since 2003.
- The TDRA enacts regulations for the space sector, specifically in the domain of satellite networks and the launching of space satellites.



<https://www.digitaldubai.ae/>

- Digital Dubai was established by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President & Prime Minister of the UAE, and Ruler of Dubai, in June 2021 to develop and oversee the implementation of policies and strategies that govern all matters related to Dubai's information technology, data, digital transformation, and cyber-security.
- The entity has been entrusted with four key tasks - accelerate digital transformation of the city through strategic partnerships with governments and private sector entities, increase the Emirate's digital economy contribution to the city's GDP, build and develop digital competencies of national talent, and maintain and develop Dubai's digital wealth whilst accelerating Dubai's cybersecurity efforts.