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DIGITAL TRANSFORMATION IN ARAB CITIES

THE INTERVIEW
H.E Engineer Dawood Al Hajri, Director General of Dubai Municipality, talks about Dubai's experience with Digital Innovation

URBAN INSIGHTS
Experts' insights on the digital transition in Arab cities
Toolkits for digital transformation and smart cities

CITIES IN ACTION
Projects and Initiatives in Arab Cities on adoption of digital tools for urban development and management practices

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FIFTH ISSUE

DIGITAL TRANSFORMATION IN ARAB CITIES

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EDITORIAL

DIGITAL TRANSITION OPPORTUNITIES AND CHALLENGES IN ARAB CITIES

By Dr. Jihad Farah - Editor in Chief

The images of flying drones, automated cars, and ubiquitous holograms in cities are no longer confined to movies and novels of science fiction. The fourth industrial revolution is here, and it has provoked a profound transformation in the ways our societies, economies, and cities operate. Behind this industrial revolution lies what is called the Digital Transition. The latter covers a wide diversity of phenomena where digital technologies transform the nature of interaction within people and between people and their natural and built environment.

The discourse on digital transition acknowledges the diverse applications of these technologies within the urban planning and development domain. An application that has been in play since the eighties is that of Geographical Information Systems (GIS), which systematically stocks, visualizes, and analyzes urban spatial information. This leads to a greater understanding of city dynamics and enhances the capacity to plan better and simulate prospective scenarios. Digital twinning through GIS is one of the latest advancements in this field, allowing detailed 3-D digital duplication of the city. With the help of ubiquitous sensors, smart grids, and Internet of Things applications, a continuous stream of live information can be directly analyzed, supported by Command and Control Centers that allow instantaneous response to expected threats (from traffic congestion to floods and other disasters).

Other digital technologies, such as social media and participatory and crowdsourcing platforms, enable citizens to be directly involved in public debates and decision-making. Whereas most municipalities use social media platforms to communicate their work, others may adopt crowdsourcing platforms, augmented reality gaming, or the Metaverse to encourage the co-creation of solutions.

More recent technological developments have the potential for a more significant impact. For example,

automated vehicles such as drones and other flying devices profoundly transform urban mobility. Machine learning and artificial intelligence represent the latest and most significant impact of this digital transition, raising complex questions regarding the implications of this form of intelligence within society.

On a larger scale, the notion of Smart Cities strategically mobilizes technologies in urban development practices. It situates digital technology as a main driver of the economy, with tech-businesses incentivized through free-zone clusters, incubators, modernized smart grids, and internet infrastructure. Furthermore, e-government applications and similar digital platforms allow for better administrative and social service provision, improving cities' overall quality of life.

Digital transition, however, does not come without challenges. The biggest and most significant of these challenges is the "digital divide" that emerges between individuals, communities, and cities that have the capacity to use and benefit from access to these technologies versus those that do not. Another challenge that emerges is regarding privacy and cybersecurity concerns. Technology that safeguards against security breaches is often costly, and the expertise to operate it is limited, hindering the adoption of such mechanisms in municipal systems. Moreover, the speed at which technologies become obsolete raises questions regarding the best possible strategy a city should follow when investing in them.

In the Arab region, the adoption of digital technology is growing rapidly; the population connected to the internet grew from 28.8% in 2012 to more than 70% in 2022. Moreover, the digital economy is fast-growing, estimated to reach a market share of 95 billion USD in the Middle East region by 2025. However, this growth is taking place in a disproportionate manner, indicated by significant differences in the quality and speed at which digital tools are emerging within countries and cities; if not addressed, this risks provoking greater marginalization and social divide in cities. This disparity in speed is evident between different Arab municipalities. Some cities, primarily in the Gulf region, are trailblazing at the forefront of the digital transition in the region, experimenting with Blockchain, Metaverse, AI, automated and drone mobility; others, however, are still struggling to digitize their own administrations.

However, one must remember that the way forward regarding digital transition is far from unidirectional. For these technologies to best serve urban development in a city, an alignment is needed between the attributes of the adopted technology and the city's social and economic context, its urban form, the state of its infrastructure and administrative setup. It is this alignment that Arab municipalities should focus on first and foremost to be able to reap the benefits of digital transition and map their own route to a "smarter" future.

In this issue of MUDUNUNA, we look into the state of the digital transition in Arab cities. We interview Engineer Daoud AlHajiri, the Director of Dubai Municipality, who shares the experience of this global city with the digital transition. In Urban Insights, we invite multiple experts from across the Arab world to share their insights on various facets of the digitization movement in cities today. Our Cities in Action section delves deeper into the ways in which cities have adopted advanced tools, highlighting cases from over 10 cities. In AUDI news, we cover various activities AUDI has been engaged in over the last two months, including the 3rd session of our monthly webinar.

INTERVIEW

DIRECTOR GENERAL OF DUBAI MUNICIPALTY

ENG. DAWOUD AL-HAJRI

In dialogue about Dubai's experience with digital transition and adoption of advanced technology for urban management

Eng. Dawoud Abdul Rahman Al-Hajri was appointed Director General of Dubai Municipality in 2018.

He started his career at Dubai Municipality in 1993 as Town Planning Engineer at the Executive Planning Department, then held several positions in the same field, including Head of the Planning Department, Director of the Executive Planning Department, then Assistant Director General of Dubai Municipality for the Engineering and Planning Sector in September 2016.

Al-Hajri holds a Bachelor's degree in Urban Planning and Construction Technology from Eastern University, USA, where he graduated in 1993. He is also a graduate of the Mohammed bin Rashid Centre for Leadership Development.



Photo: Director General of Dubai Municipality, Eng. Dawoud Al-Hajri

Reports on Dubai's experience with urban developmental focus on the motivation of and direct role played by the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, which aims to make Dubai the "happiest city in the world." From this vision emerged ambitious strategies, including the 'Smart Dubai Strategy.'

"Dubai's experience in digital transformation confirms that opportunities are constantly present"

How do you see Dubai Municipality's role in achieving the targets of the 'Smart Dubai Strategy'?

Today, Dubai is progressing along a comprehensive development path that targets all aspects of life, relying on long-term strategic planning centered around human welfare. Its main goal is facilitating people's lives, enhancing their happiness, and elevating Dubai's leading and competitive global status. This blueprint for this journey has been laid out by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, and by his vision of making Dubai the best city in the world for both residents and tourists.

Stemming from this vision, Dubai's digital experience began over 25 years ago, aiming to digitize life in the city, transforming Dubai into the world's most prominent digital city and capital, especially in terms of digital life quality, reflecting the overall quality of life.

At Dubai Municipality, we provide more than 60% of the city's services, and in all our strategic plans, we focus on enhancing the city's digital aspect and adopting the latest advanced technologies that serve our scope of work. One of the main pillars of our strategic plan for 2022-2026 is to build competitive digital work mechanisms that contribute to providing an integrated digital service system, enabling the municipality to achieve its mission and goals to deliver the best services to people and enhance their happiness and well-being. At the same time, we aim to achieve the principle of proactivity in providing services that exceed users' expectations. The goal is to enhance Dubai's digital excellence and achieve a complete transformation into digital life. Our teams conduct periodic updates, improvements, and development of services to ensure time and cost efficiency for rapid completion rates, thus facilitating our residents to apply for those services directly through a consolidated application.

A pioneering vision for a global city that we are diligently working to achieve is the translation of the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, which entails making Dubai a leading and advanced global city, positioning it as the best city in the world to live in. This is being done with the generous support of His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Deputy Prime Minister and Minister of Defence, and His Highness Sheikh Maktoum bin Mohammed bin Rashid Al Maktoum, Deputy Ruler of Dubai, Deputy Prime Minister and Minister of Finance; their directives aim for more significant achievements and gains that consolidate the emirate's global status as a digital, tourist, financial, and economic hub and a future model for cities.

In the early stages of its development, Dubai has focused on data management and sharing as key drivers for the city's digital transformation journey. Could you please elaborate on the standards adopted to encourage the construction of databases and their sharing, especially with businesses, residents, and visitors? How do you deal with public and private institutions, their data sharing, and the risks associated with data security and privacy?

Dubai Municipality has adopted and supported open government data initiatives as part of its continuous efforts to promote transparency and innovation. This has led to the release of 86 datasets to the public and private sector entities, leading to Dubai Municipality achieving a score of 0.97 on the United Nations Open



Happiness vehicle
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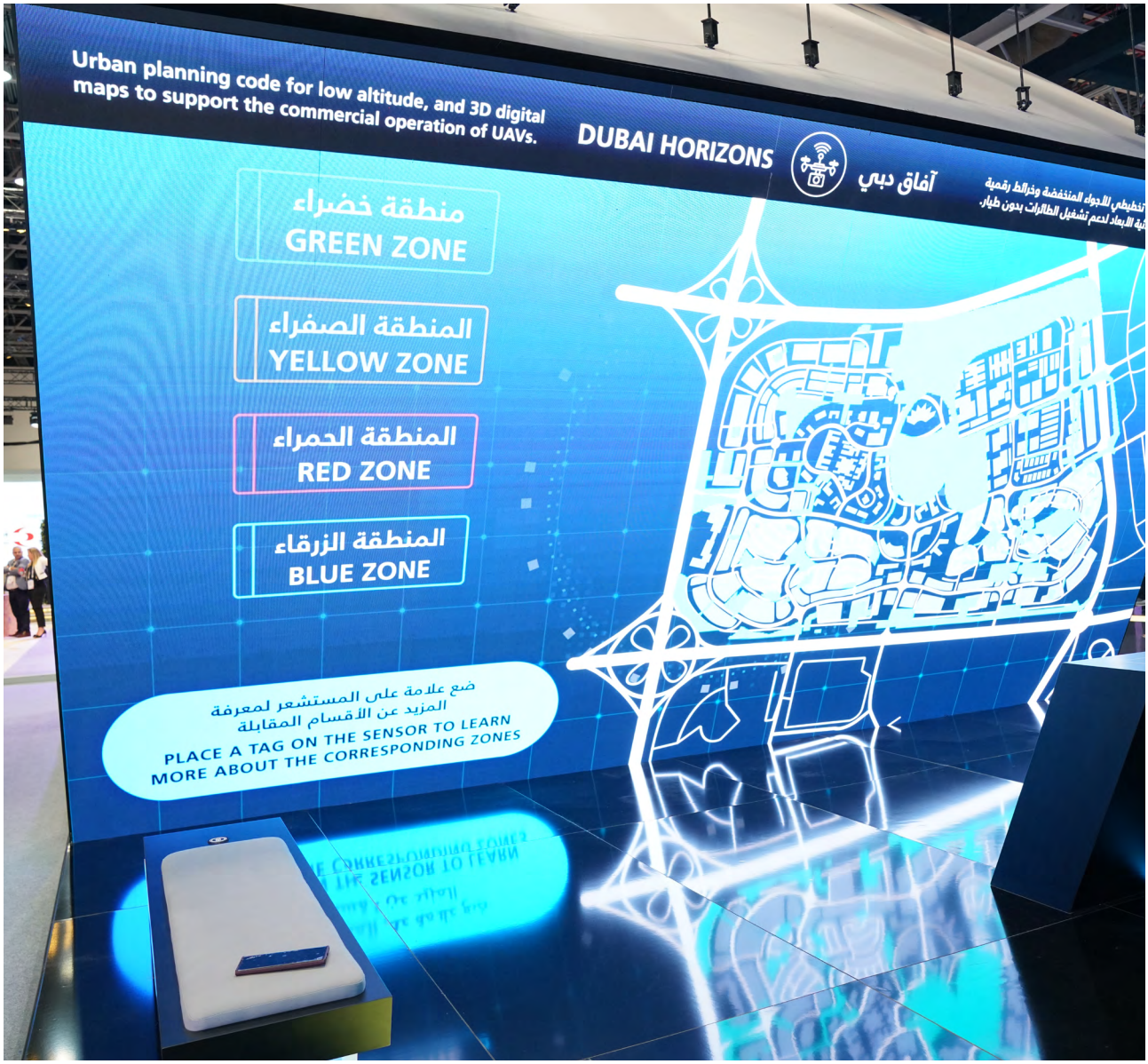

Dubai Horizons: Interactive 3-D Digital map
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Government Data Index. Additionally, Dubai Municipality has given utmost importance to data privacy by complying with the Dubai Data Law when classifying datasets, maintaining 100% compliance with Dubai's data sharing rules and regulations. It has also established a comprehensive framework for data governance, management, and sharing, defining all roles, responsibilities, and processes involved.

Furthermore, Dubai Municipality has supported all of the efforts mentioned earlier with reliable cybersecurity measures, including preventive measures to address risks of data sharing such as breaches, violations, and cyber threats. It prioritizes the management of permissions to classified data as secret or sensitive, encryption, and periodic auditing of information security controls.

Recently, Dubai has been striving to develop initiatives built on various advanced digital technologies such as Blockchain, Digital Twinning, Artificial Intelligence applications, and others. Experts believe that these technologies have a profound impact on urban management and development mechanisms. Could you please enlighten us on how Dubai deals with these technologies and what benefits you expect from adopting them?

Dubai places great importance on modern technologies, believing that various aspects of life in the future will be built upon them. It sees itself as a key player in designing, enhancing, and driving cities' evolution. This interest stems from a forward-looking perspective aiming for Dubai to become a leading

global center in adopting advanced technologies that contribute to improving people's lives. To this end, Dubai has launched several plans and strategies revolving around technology, including the Dubai 3D Printing Strategy, Dubai Digital Strategy, Dubai Metaverse Strategy, Dubai Blockchain Strategy, Dubai Robotics and Automation Program, and others, all aimed at digitizing life in the emirate.

At Dubai Municipality, we work to implement the leadership's plans and visions and achieve the goals of all digital plans and strategies. As part of our strategic focus on building globally advanced infrastructure, we are developing a geospatial system to materialize Dubai's digital twin. We organize all processes, services, and projects related to it through the Geographic Information Systems Center, one of the most advanced centers in the Middle East and North Africa. The Dubai Digital Twin Geospatial project aims to create an exact digital replica of Dubai with 2D and 3D maps containing all assets, landmarks, and facilities. In addition to this, we are working on the Dubai Horizon project in collaboration with strategic partners in the emirate, aiming to create a zoning code for low altitudes and digital 3D maps to support the operation of drones, planning their routes, airport locations, and runways in line with Dubai's future plans in aviation mobility, providing new services in shipping, delivery, aerial photography, and more.

In the artificial intelligence domain, we have integrated these technologies into municipal work areas, supporting our vision of being a 'leading municipality for a global city' aiming to make Dubai more attractive, sustainable, pioneering, and improving the quality of life every day. We have used AI Urbanist tools for urban planning, which assist planners in generating solutions for urban environments, providing accurate recommendations in city planning processes, resulting in up to 80% savings in cost and effort. We also operate the world's largest waste treatment and energy conversion center, employing the latest AI technologies and systems, which treat waste and convert it into energy, serving 135,000 residential units in the emirate. We have also employed AI in detecting construction violations through an integrated system of precise aerial photography using drones and processing images through AI to detect unauthorized violations, additions, and modifications in buildings.

Today, we oversee the organization of 3D printing in construction as part of our efforts to lead digital transformation in the construction sector, adopting the latest building systems in line with Dubai's 3D Printing Strategy and keeping pace with the upcoming industrial revolution 4.0.

Dubai focuses on user experience and interaction with applications to increase community participation in public life in the city. However, like many cities, people always find using modern technologies challenging. How does Dubai deal with the "digital divide" challenge, which typically excludes these individuals from benefiting from services, participation, and contributing positively to the city's development?

Dubai's focus on creating an ideal user experience aims to serve all community members and contribute to public life through advanced technologies, thus achieving their happiness and social well-being and enhancing their quality of life to be the best worldwide. One of the major challenges facing this integration and transformation is the existence of the digital divide. However, this gap is at its lowest level in Dubai due to several factors. Firstly, this is due to the advanced digital infrastructure established by the emirate decades ago as a forward-looking step towards the urban future. Secondly, the legislative framework attracts direct investments specialized in technology and advanced technologies, which has propelled digital transformation and prepared the digital environment to accommodate the needs of the government, the private sector, and individuals.

Periodic updates and development in services provided by all governmental entities in the emirate have also contributed significantly to reducing the digital divide. The "360 Services" policy launched by His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Deputy Prime Minister and Minister of Defence, represents a new perspective and roadmap for the future of services in the emirate. Its goal is to design a new vision for government services based on integration between different entities closely linked to the needs of various user groups, ensuring seamless, proactive, and tailored services to create a global model for government service delivery and achieve the emirate's strategic directions.

One of our institutional values at Dubai Municipality is positivity and participation, which are fundamental in achieving our goal of delighting people and providing digital services that meet users' needs and exceed their expectations. Therefore, we are always keen to enhance participation and transparency with service recipients to identify the key challenges they face to design the best digital services for them.

Knowledge and technical skills of administrations are usually among the prominent challenges facing the digital transformation journey, prompting some cities to renew their staff, create specialized ancillary departments, or adopt intensive training programs. How did Dubai deal with this challenge?

The Emirate of Dubai believes humans are the main drivers of development and progress. Therefore, from the beginning, one of the priorities of Dubai's wise leadership has been to launch programs, initiatives, and plans that enhance the capabilities of the human workforce, provide a stimulating and encouraging work environment for development, innovation, and creativity, and develop their technical skills. Additionally, it aims to enhance the leadership skills of administrative staff to support the digital transformation process in all institutions and entities. This includes activating advanced digital infrastructure and continuously updating it to keep pace with global technological changes. All of this has helped keep the administrations in all government institutions in constant development and continuous improvement.

At Dubai Municipality, we are committed to continuously keeping pace with the latest global technological changes, in line with the emirate's strategies, to create the best working environment globally. We have developed advanced, competitive digital work systems and enhanced the leading innovation system. To strengthen and support the system, we always strive to attract and retain the best talents who support the vision and mission of Dubai Municipality.

Finally, what are the most prominent lessons from Dubai's digital transformation experience?

Dubai's experience in digital transformation confirms that opportunities are constantly present, but the crucial point lies in how cities and governments seize and leverage those opportunities to achieve growth and reach integrated models that mimic the cities of the future. Dubai seized the opportunities viewed as challenges by others, transforming itself into a vast world, inspiring the globe with its speed of seizing and creating opportunities.

This is the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, which emphasizes looking far ahead to design and shape the future. Today, Dubai competes with itself, moving steadily and confidently towards the future as a present model of how to manage resources and energies to shape a model for the city of the future. Day by day, it proves its global leadership and competitiveness, becoming an attractive hub in all fields, including business, economy, tourism, technology, and more.



Future of agriculture, farming, and parks
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URBAN INSIGHTS

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DIGITAL TRANSFORMATION OF MUNICIPALITIES IN THE MIDDLE EAST AND NORTH AFRICA: OPPORTUNITIES AND CHALLENGES



Muna Shalan

Muna Shalan is the project component manager and regional coordinator of Connective Cities-GIZ in the MENA region. She holds a doctoral degree in Urban Planning from RWTH Aachen University in Germany, and has extensive experience in the field of integrated urban development and international development.

Despite digital transformation efforts in the MENA region, there are significant disparities in the registered outcomes. While some municipalities have made significant progress, many face challenges owing to the lack of digital information, weak in-house expertise, and limited financial resources. Overcoming these challenges is tedious and complex. However, taking the first step towards establishing up-to-date robust municipal database presents an opportunity for achieving the desired transformation and making informed and evidence-based planning decisions. As municipalities embark on this transformational journey, it is imperative that they plan for the mitigation of risks related to data protection and cybersecurity that are crucial for safeguarding and promoting trust in digital transformation.

Being on the forefront of rapid crisis response, municipalities need significant support and investments in digital transformation and effective digital governance, particularly to ensure the continuity and delivery of core municipal functions and to avert from ad hoc planning practices. Having onboarded a transformational journey, some municipalities in the MENA region have amplified their efforts for digitalization in different areas. The following are interesting examples, representative of such engagement by municipalities of different sizes with varied resources from around the Arab region.

Hazmieh municipality in Lebanon and Hebron municipality in Palestine have employed geographic information systems (GIS) to improve municipal service provision, strategic planning, tax management and decision-making. In the same vein, a partnership between Beit Jala municipality in Palestine and Jena municipality in Germany led to the exchange of municipal know-how on enterprise GIS. Furthermore, a full end-to-end digital transformation solution was implemented by Zgharta municipality in Lebanon. This digital platform leverages tools and technology that increase the efficiency and effectiveness of operations and service delivery in the municipality and improve interdepartmental coordination. In addition to this, the GIS department in Madaba municipality in Jordan has launched a web-based navigation app that was needed by the city to improve visitors' experience.

Dubai's digitalisation strategy (2022-2026) aims at achieving full digital transformation. Among its main pillars is to build digital and competitive work systems that contribute to providing an integrated digital services system. This system enables the municipality to achieve its mission and objectives by providing the best pioneering services to serve people and enhance their well-being. In Egypt, the new administrative capital city utilizes smart city technology, such as surveillance and public-order-focused technology. Similarly, an operational control center in Lusail City in Qatar governs the activities functioning throughout the city. The centralised command and control center provides surveillance through the city 24-hours a day. As a core component of a smart city, energy-efficient and environment-friendly mobility has been pursued in many cities in Morocco, with high-speed interregional trains improving connectivity between urban centers in addition to a plethora of ecological and economic benefits.

The Amman Urban Observatory (AUO) monitors indicators of urban growth trends. City planners are thus equipped with real-time data to devise evidence-based policies and development plans. AUO collaborates with ministries, government departments, national organizations, NGOs and utility companies to leverage data on the one hand and to share it with different stakeholders on the other. Such urban indicators include vital characteristics for measuring sustainable urban development, such as unemployment rates and the percentage of people living in poverty. As an important milestone in its digital transformation process, in March 2024, AUO launched its sustainability platform, enabling monitoring and assessment of the city's performance on indicators for environmental sustainability, climate resilience and risk-informed urban development.

In its digital transformation strategy, "Digital Morocco 2025", Morocco has emphasised citizen welfare and social services by targeting the reduction of social inequalities due to digital disparities between the digitally-connected population in large cities and those in rural areas. The strategy aims to advance social inclusion and human development through the induction of new technologies. Meanwhile, in Jordan, the social development division of the Greater Amman Municipality implements several measures with a special focus on 'community health and wellbeing', under the umbrella of digitalised social services. Community participation is the cornerstone of planning and conducting public events and workshops. The inclusivity in these activities is reflected in the engagement of the elderly, which was exceptionally high, given the digital nature of the community events.

In light of the experience of Connective Cities in the MENA region, peer learning and practice-oriented knowledge-exchange present a valuable opportunity for augmenting long-term transformational processes, as well as for taking first steps towards capacitating municipalities with digitalised information and technical know-how. In the long-term, municipalities should plan strategically for digital transformation by allocating congruent financial and technical resources in addition to focusing on citizen-centric services. Assigning a central role for the city planner in the management of cutting-edge technologies in the urban realm is key to empowering municipalities to successfully navigate the complexities of digital transformation and deliver enhanced value to their communities.

External Article

SMART CITIES IN THE AGE OF ARTIFICIAL INTELLIGENCE



Sehl Mellouli

Sehl Mellouli is a Professor in the Department of Management Information Systems at Université Laval in Canada. Dr. Mellouli was appointed Deputy Vice Rector for Academic and Student Affairs in 2020. His research interests include smart cities, electronic government, intelligent systems, and data analysis.

Artificial Intelligence and the Public Sector

Artificial Intelligence (AI) deals with the design of systems to reproduce human traits such as problem-solving, learning, perception, understanding, reasoning, and awareness of surroundings. It can be defined as the science and engineering of making intelligent machines able to perform human tasks. AI offers the potential to monitor, analyze, and effectively utilize vast volumes of data (from the Internet of Things (IoT) and/or Big Data sources) customized to situations that differ in complexity and context. This led to the evolution of AI systems capable of identifying patterns and making predictions, decisions, and conclusions with minimal human intervention.

In the context of the public sector and public administration, adopting digital technologies, including IT and computer technologies, has been a transformative process, revolutionizing various aspects of governance, communication, and service delivery. The public sector went beyond digitization and embraced the power of AI to further advance its operations and services. In this context, AI offers great potential for public organizations and governments to transform the way they operate and develop services and policies. AI could modernize government services and alleviate the administrative and operational burden by automating routine tasks and augmenting and empowering staff through AI-driven recommendations. AI is actively shaping and boosting the road of digital transformation by fostering smarter management, service delivery and policy-making.

AI creates new opportunities for cities to improve their operational efficiencies, quality of service, citizen's quality of life, and sustainability. The concept of smart city doesn't have a universal definition in the literature. However, it refers to several key dimensions such as smart governance, smart environment, smart

people, smart living, smart economy, and smart mobility and where each smart city is a unique ecosystem. In the last few months, AI has become a critical element for smart cities since it can contribute to operational efficiencies and automation. Despite the potential benefits of AI and efforts to adopt and deploy AI, many cities have struggled or failed in their attempts to adopt AI. The adoption of this technology is still relatively low in many cities due to different barriers and challenges that cities may face.

The adoption of AI in smart cities is an emerging phenomenon. However, this adoption faces several barriers where a barrier is an issue or an obstacle that prevents, prohibits, or negatively affects the adoption of a new technology and that can be overcome with effort. From the literature, we can state that there are 18 barriers to AI adoption in cities. These barriers can be grouped into three main categories: technology, environment, and organization.

Technological barriers are the constraints and concerns related to technology and its impact on smart cities. These barriers are mainly related to privacy issues, cybersecurity issues, lack of AI explainability, disruptive nature of AI technologies, singularity issues, decision-making issues, digital divide issues, the complexity of AI use and implementation, and data quality and availability. The organizational barriers are the internal barriers related to smart cities' characteristics and resources (e.g., human, financial and technological resources, employees and managers, city initiatives, culture, and regulations). They mainly encompass the lack of financial resources, the lack of IT infrastructure, the limited skills of human resources, and the employee resistance to change. Finally, environmental barriers are the factors or conditions outside the organization that can affect the adoption of a new technology. They deal with mass unemployment issues, public fears and non-trust in AI, lack of a legal framework, the negative impact of AI on sustainability, and the negative impact of AI on economic development.

Despite the different barriers that cities can face to adopt AI, it brings different opportunities for smart cities to enhance their operational efficiency, increase customer engagement and loyalty, improve employee service quality, and substantially reduce operational costs. We present hereafter some of these opportunities in the contexts of services to citizens, sustainable development, and economic growth. For citizens' services, AI can be used, for example, to develop chatbots or virtual assistants to serve local government services or to furnish personalized information pertaining to different services. It can also be used to analyze health trends and improve emergency responses to reduce healthcare risks for the population. In the context of sustainability, AI can optimize traffic management and public transportation schedules to reduce gas emissions or monitor air quality and energy consumption. In addition, AI can support city planners in defining how space can be explored for future development. Finally, for economic growth, AI can help cities improve their strategic business outcomes, including improved service quality by customizing services to citizens, increased productivity by automating routine processes, and cost-effective service excellence by reducing service costs.

With all the barriers and opportunities for the use of AI in cities, cities need to pay attention to the fact that the adoption of AI varies from one context to another. The adoption of AI is not only a matter of benchmarking but also a matter of adaptation to the context of each city.

External Article

DIGITIZATION IN TUNISIA: TOWARDS AN EFFECTIVE TRANSFORMATION



Wiem Amri

Wiem Amri is an expert in IT and digitalization, holding the position of Head of IT and Process Department at the Municipality of Bizerte. In this role, she leads the city's digital transformation by overseeing various digitization projects and modernizing municipal IT systems.

Tunisia is witnessing a crucial stage in its digital evolution, as it is moving persistently towards transforming its public services through ambitious initiatives. Several strategies, such as SmartGov2020 and the national digital strategy, highlight the government's commitment to modernizing management and facilitating digital transactions. These efforts are aimed at simplifying interactions between the state and citizens and promoting digital development throughout the country.

The telecommunications infrastructure in Tunisia is a crucial pillar of this transformation, providing extensive coverage of 3G and 4G technologies. This has allowed almost 70% of the population to access the Internet in 2023, increased the demand for electronic services, and contributed to the growth of an active digital economy.

In the field of e-government, according to the United Nations E-Government Development Index in 2022, Tunisia advanced to take the 78th place globally. These efforts aim to facilitate access to public services via the Internet, to simplify administrative procedures.

Platforms such as e-Tax and e-Social for tax liability management and online social security services have revolutionized this area. Despite the postponement of some of its projects, the digital Tunisia 2020 program played a crucial role in this transformation, while the implemented initiatives contributed to improving the efficiency of Management in general. One of the most important initiatives that is worth mentioning is the "single identifier" project, a major initiative for digitalizing public services in Tunisia, where a single electronic identifier is assigned to any natural person who holds Tunisian citizenship once registered in the civil registry. This 11-digit identifier represents a significant step forward in simplifying access to public services in Tunisia. By concentrating citizens' personal data, this project aims to reduce complex administrative procedures, enhance security and

efficiency in interaction with government and municipal entities, and improve data collection in all sectors of the economy. The single identifier is part of a broader digital transformation strategy of the Tunisian public administration, also known as "e-government".

The IT sector benefits from increasing investments, with the support of international partners such as the World Bank and the European Union and through specialized programs such as "Smart Tunisia". In addition to this, the large number of graduates of Tunisian universities in Information Technology contribute to strengthening local capacities and, subsequently, attracting foreign investments.

The widespread use of smartphones has transformed how Tunisians interact with public services and administration. However, this increase in digital transformation comes with challenges in the field of cybersecurity. To deal with this challenge, the National Cybersecurity Agency (ANSI) was created to strengthen data protection.

On the other hand, there are leading local initiatives that adopt digital technology to enhance administrative efficiency and raise citizens' quality of life. Here, we highlight some examples.

- Among several Tunisian municipalities, the "e-Baladiya" gate stands out as a pillar in this transformation. This portal is accessible online, allowing residents to view urban development plans, request building permits or birth certificates, and follow up on their administrative files. This platform also simplifies administrative procedures, enhances transparency and reduces the need for transportation, effectively meeting the needs of citizens.

- In Sousse, the concept of a smart city is embodied through innovative projects to improve the city's management. Sensors are used to improve waste collection, reducing costs and environmental impact. In addition, traffic management systems are being deployed to reduce congestion, while connected surveillance cameras enhance public security.

- In Sfax, the "Sfax Digital City" initiative is leading a revolution in the Municipal Administration through digital transformation. The Municipal Archives have been digitalized and an electronic document management system has been created. Online services allow citizens to process permit applications and pay local taxes effortlessly. In addition, Sfax improves urban planning and infrastructure management, using GIS to enhance its administrative efficiency. In Haidara, the" Maison de Service Digitale " is a model for the unified network of administrative, educational and social services via the Internet. This initiative contributes to simplifying procedures for citizens and plays a crucial role in enhancing digital skills in the local community, which contributes to reducing the digital divide.

- Bizerte is moving towards a more transparent and effective municipal administration by introducing electronic management systems and creating a "citizen space", a unified window for municipal services, where citizens can complete various administrative procedures without needing to visit various departments. Bizerte Municipality is also one of the 8 model municipalities for the implementation of the National Project "E-Construction", an electronic platform that ensures the issuance of building permits online by managing the entire process from the submission of the application to the electronic payment of the building permit and its extraction. It is currently at the last stage of testing before the official launch of the platform.

Despite the progress made, several important challenges remain and must be addressed. To fully succeed in its digital transformation, Tunisia must increase investment in modernizing its IT infrastructure and expanding internet access in underserved areas. It is also necessary to launch training programs dedicated to enhancing digital skills among the population and employees working in the public sector. There should also be a priority in strengthening cyber security measures and sensitizing citizens to data protection. It is necessary to modernize the regulatory framework to support digital innovation, create a favorable environment for adopting new technologies, encourage effective partnerships between the public and private sectors, and develop innovative digital solutions that suit local and national needs.

External Article

THE WAY TOWARDS DIGITAL TRANSFORMATION IN PALESTINE



Maysoun Ibrahim

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Digital Transformation in Palestine is witnessing significant growth, accompanied by many initiatives to accelerate this transformation process despite the tremendous economic, social and political challenges the country is facing. According to the Palestinian Central Bureau of Statistics, internet usage in Palestine is increasing rapidly; 93.5% of households in Palestine had access to home internet service until mid-2023. Statistics also show that 48.6% of individuals in the Palestinian society use internet to obtain various information and services, while 92.1% in urban communities use social and professional networks.

According to the Palestinian Ministry of Communications and Digital Economy data, the percentage of active cell phone subscriptions in Palestine increased to 4.4 million subscribers, equivalent to 92.0% of households, by 2022, compared to 2.6 million subscribers in 2010.

Successive Palestinian governments have developed several strategies to promote digital transformation in various sectors. They have also prioritized the development of the digital economy through several initiatives aimed at improving digital knowledge, providing e-government and municipal services, and encouraging innovation and entrepreneurship using information technology. Efforts to digitize public services and automate and simplify administrative processes are a key element of the strategies developed, considering the need to take advantage of digital

transformation to improve and enhance efficiency, transparency, trust, justice, equality and accessibility to citizens.

In the same context, the Palestinian Council of Ministers adopted the "Digital Palestine Agenda" in 2023, which aims to promote digital transformation in all local development sectors. Since 2017, laws have been issued to deal with electronic bonds, electronic signatures and personal data protection. In 2023, Law No. 11 on the e-government services system was issued, which aims to organize and govern the system of these services in administrative, operational, technical, technical and financial terms.

Despite the progress achieved and the efforts being made at all levels, Palestine faces many challenges that hinder the full realization of digital transformation. The political and economic instability resulting from the reality of the occupation is the most prominent of these challenges; it has a significant impact on financing and sustainable development of digital projects, in addition to its impact on the fears of Palestinian citizens regarding the security of their data. The restrictions imposed by the occupation on importing a number of technologies contribute directly to infrastructural insufficiencies. Furthermore, there is a digital skills gap in the workforce and citizens to use tools and services effectively to achieve digital transformation locally.

On the other hand, in 2023, the Ministry of Local Government started working on a unique strategy for digital transformation for all municipalities, in cooperation with specialists from municipalities, the Ministry of Communications, universities, the Palestinian Association of Informatics and Technology and the private sector. A study published in 2021 by the United Nations Development Programme (UNDP) indicates that the municipalities of Ramallah, Al-Bireh, Hebron, Beit Jala, Bethlehem (in the West Bank) and Khan Yunis (in Gaza) have already adopted strategies to become e-municipalities.

Ramallah municipality is working on implementing the "Smart Ramallah City" project, which aims to strengthen urban management and improve residents' quality of life through IoT technologies and data analytics. This initiative is based on improving waste management, traffic flow, public safety, and other aspects. The municipality also launched the "Ramallah Municipality" mobile application, which provides citizens with many of the municipality's services electronically, including an interactive map of tourist sites in the city.

Being one of the world's most important religious tourist cities, Bethlehem Municipality launched the "Smart Bethlehem City" project, a promising project to use digital technologies for sustainable urban development and preserve the city's cultural heritage. Through the project, a mobile application was developed that includes information about historical sites and religious monuments. The application provides augmented reality technology to enable its users to reconstruct ancient sites and historical events. In addition to this, it creates a digital archive of the city's heritage and history and organizes virtual exhibitions for visitors to explore.

In a step within Hebron Municipality's plan towards digital transformation and to increase the efficiency of services to the public, the municipality launched the "Hebron Municipality" mobile application, which includes many necessary services to facilitate citizens' communication with the municipality to complete various transactions.

The municipality also launched the electronic card "Hebron is My City" that contains data related to real estate in the city, including identification of geographical locations and financial data related to each property. The card is linked to the application of "Hebron municipality" to enable card users to request services from the municipality.

As one of the historic cities in Palestine, Nablus municipality has launched its app that enables citizens to access many municipal services through their digital devices. Citizens can conduct electronic transactions to the municipality, including following up on requests and submitting complaints supported by photos. The application also provides users with water-related data, and the option of reporting fires as well as other related tasks such as following up on complaints sent to the municipality.

As a gateway of hope towards a better future for the Palestinian citizens, all parties in Palestine are striving to achieve digital transformation at all levels of development and local urbanization, as far as possible, as one of the tools to enhance resilience, raise the efficiency of services, and improve the quality of life for citizens.

External Article

DIGITAL TRANSFORMATION PROSPECTS FOR CITIES



Abdullah Alsabe
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The progress in the digital transformation of Arab cities represents a significant advancement, attributed to the employment of technologies that play an essential role in our daily lives and in shaping a more civilized future. This transition from simple to more complex technologies lays the basis for innovations that can profoundly affect various sectors. As a role model, the Kingdom of Saudi Arabia has successfully adopted innovative technologies and developed integrated systems that have led to fundamental changes and transformed its cities into major players in this domain.

Early transformation is attributed to cities' adoption of simple technologies, such as car-sharing applications, that paved the way for more profound changes. This transformation has crystallized with the phenomenon of delivery companies, as they facilitated the delivery of various services to homes, such as commercial products from shops and restaurants, thus paving the way for the emergence of new economic drivers. These developments, in turn, have led to increased dependence on technology, mainly E-Commerce. Moreover, these applications have encouraged many individuals to adopt greater technologies in online shopping, later known as electronic shopping, as these experiences formed the nucleus for companies providing shopping services to respond to household needs, and all these technologies contributed to attracting more logistics and financial technologies companies.

The impact of this transformation extends far beyond the economic sectors, as it has stimulated these changes in user behavior, pushing large companies to become centers of innovation that contribute significantly to national economies and job creation. These local initiatives enable entrepreneurs to take advantage of new opportunities and require substantial government support to accelerate their development and ensure that they contribute effectively to advancing development and accelerating the pace of development and innovation.

Adopting these technologies means the continuity of development, as our lives have become somehow more dependent on them and the accompanying rapid advancement they bring over a short period of time. Countries that have embraced early-stage core

technologies are better positioned to leverage innovations seamlessly, enabling them to remain competitive in a rapidly evolving global landscape. Conversely, countries that are slow to adopt these technologies risk falling behind, exacerbating inequalities, and hindering societal progress.

Amid these challenges lie abundant opportunities for countries to integrate technological developments into everyday transactions. As the technological revolution matures and converges with artificial intelligence and smart infrastructure, continuous integration across major sectors, such as education, trade, and healthcare, has improved the community's quality of life and increased citizen satisfaction. Such transformation strengthens the importance of technology as an essential component of contemporary urban life.

Therefore, while these technologies are now indispensable, careful regulation and governance are necessary to mitigate potential risks and ensure their responsible use. By harnessing these technologies effectively, Arab cities can build a resilient and sustainable future that meets the needs of their citizens while driving economic and social prosperity more comprehensively.

TOOLKITS FOR DIGITAL TRANSFORMATION AND SMART CITIES

The past years have exhibited a marked increase in the adoption of digital tools in urban planning and management, and this trend has accelerated with the advent of artificial intelligence. To help local governments and other stakeholders use these tools effectively, various organizations have developed guidelines and manuals addressing various aspects of this digital transformation.

This issue of Mudununa provides a comprehensive overview of toolkits developed by various international organizations to help municipalities better understand the processes required for successful integration of digital technologies in urban planning and management practices. The toolkits below display a wide range of characteristics associated with digitization, including digital inclusion, smart city governance and smart cities' policy making.

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Toolkit 1:
Managing smart city governance - A playbook for local and regional governments

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Toolkit 2:
Building Innovative Digital Services: Municipal Action Guide

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The Smart Cities Playbook

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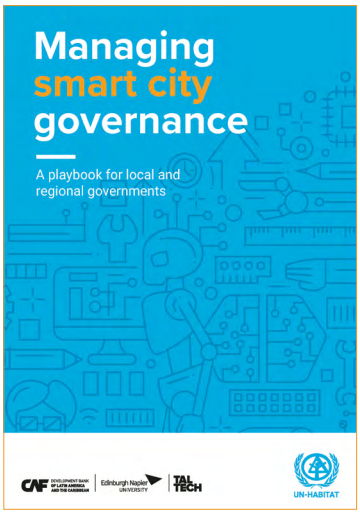
Toolkit 6:
Building Capacity for People-Centered Smart Cities - A playbook for local and regional governments



UN-Habitat, ©2023

https://unhabitat.org/managing-smart-city-governance-a-playbook-for-local-and-regional-governments

Toolkit 1:
Managing smart city governance - A playbook for local and regional governments

The Managing Smart City Governance Playbook targets municipal governments, political leaders, local administrators, and public officials involved in smart city initiatives. It aims to foster effective, inclusive, and sustainable urban governance practices. Following a two-stage analytical process, the playbook builds on data from the Global Review of Smart City Governance Practices. A systematic review of approximately 150 scientific publications initially created a governance framework for smart city initiatives. This framework then structured an online survey that gathered insights from 300 respondents across 250 municipalities worldwide. The final stage incorporated interviews with 131 experts from 37 countries, adding further depth to the data. The playbook is divided into three pillars of smart city governance:

Strategy: Focuses on the administrative, legal, organizational, and strategic aspects of digital transformation.

Collaborative Ecosystem: Covers governance mechanisms needed to coordinate the network of stakeholders involved.

Technology: Addresses the governance required for designing and providing digital infrastructure and services.



National Leage of Cities, Digital Service Network ©2023

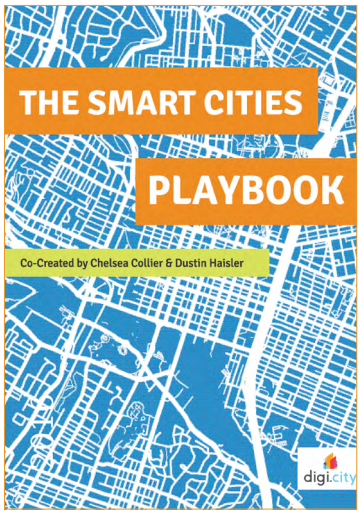
https://www.nlc.org/resource/building-innovative-digital-services-municipal-action-guide/

Toolkit 2:
Building Innovative Digital Services: Municipal Action Guide

The "Building Innovative Digital Services" toolkit aims to provide practical guidance and strategies to local government actors in an era of digital transformation. It focuses on municipal service delivery, development of user-centric systems, streamlining of digital processes, as well as communication and engagement mechanisms.

By covering key concepts such as defining digital goals, empowering teams, enhancing service design, ensuring user accessibility, and managing digital transformation effectively, the guide aims to equip cities with relevant knowledge and tools to address the risks and challenges of digital transformation. It also stresses the need for governments to define a comprehensive digital strategy where their goals and vision align with their organization's objectives. It provides insight into how organizations can build empowered teams, focusing on clearly defining roles and responsibilities by starting with small pilot projects not to overwhelm their capacities and budgets.

The guide has been developed based on informed conversations with various stakeholders and is supported by various best practices where cities have successfully adopted digital technologies to innovate and drive effective institutional transformation.



Digi City, ©2019

https://static1.squarespace.com/static/57f-ba8555016e14424f71c08/t/5cb9ea079b747a6806c2156e/1555687972377/The+Smart+Cities+Playbook.pdf

Toolkit 3:
The Smart Cities Playbook

The Smart Cities Playbook outlines what it means to be 'smart' in human terms. It does so through three primary avenues, the first clarifies the concept behind smart cities, the second provides insight into best practices, and the third consists of a framework cities and other entities can adopt when working on various solutions for smart cities.

The playbook refutes misconceptions that Smart Cities are all about technology, that they are only for large cities, and require a large amount of capital to get started. For the best practices, the playbook focuses on three categories, infrastructure, people, and intelligence. It gives an overview on leveraging existing mechanisms and open data to enhance their service provision, effective utilization of the freelance economy, the benefits of flexible organizational structures, the need for monitoring and periodic review, and adaptation of technologies to enhance user experiences.

The key component of the playbook, one that entities can directly utilize, is its 7-step process for developing impactful solutions for cities. The steps follow a logical sequence, starting with defining the user group and leading to mapping the landscape of stakeholders, identifying and testing solutions, implementation and funding, and finally, measuring and adapting. Each step is supported by a worksheet that entities can utilize to comprehensively address the parameters and respond to each step.



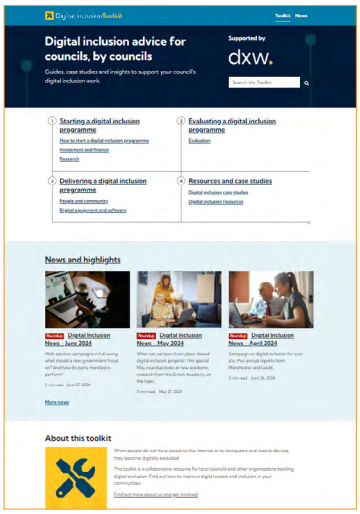
National Democratic Institute (NDI), ©2021

https://www.ndi.org/sites/default/files/Municipal%20Digital%20Transformation%20Guidebook_final%20%281%29.pdf

Toolkit 4:
Municipal Digital Transformation Guidebook

The Municipal Digital Transformation Guidebook is a comprehensive document highlighting key elements of approaching new technologies, determining the needs of citizens, and successfully managing technology transformation projects. It addresses digital transformation by targeting mayors, government officials, and project implementers including managers and tech industry specialists. The primary aim of the guide is to help government entities meet the growing expectations of their citizens in light of constantly evolving digital technologies.

It recommends starting the process by defining a goal that translates into a comprehensive program for the city. This program is then to be strengthened by developing the right project team, followed by identifying project parameters and stakeholders to support both the project's short-term implementation and long-term sustainability. Throughout the guidebook, relevant international case studies are benchmarked to translate concepts into practical outputs. In addition, the guidebook also refers to several valuable resources that target specific themes of digital transformation projects, including cybersecurity, public outreach, and accessibility and equity.



Digital Inclusion Toolkit, ©2022

https://digitalinclusionkit.org/

Toolkit 5:
Digital Inclusion Toolkit

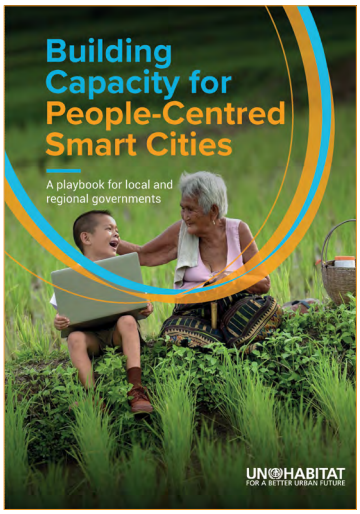
The Digital Inclusion Toolkit offers comprehensive advice and information for local governments (councils and municipalities) on digital inclusion (DI). Without internet access and basic digital skills, many people struggle to access essential local services. This toolkit helps municipalities avoid common pitfalls and launch effective DI programs swiftly and consists of the follow key components.

Starting a Digital Inclusion Programme involves a community-based approach, investment and finance, which includes four stages: finding focus and partnerships, identifying barriers and opportunities, forming and implementing a plan, and measuring success.

Delivering a Digital Inclusion Programme engages people and communities by establishing a Digital Champions network, developing a comprehensive digital inclusion guide, and focusing on the needs of older adults.

Evaluating a Digital Inclusion Programme requires thorough impact assessment. Funders need to understand the effectiveness of their investments, and program managers need insights into what works well.

The toolkit includes detailed "how to" guides, resources, and case studies, covering every aspect of starting, delivering, and evaluating digital inclusion projects. This comprehensive resource ensures councils can implement successful and sustainable digital inclusion initiatives.



UN-Habitat, ©2020

https://unhabitat.org/programme/legacy/people-centered-smart-cities/building-capacity-for-people-centered-smart-cities-a

Toolkit 6:
Building Capacity for People-Centered Smart Cities - A playbook for local and regional governments

"Building Capacity for People-Centered Smart Cities" is a key playbook in UN-Habitat's flagship program to empower local governments for digital transformation. This playbook provides pragmatic guidance for developing capacities towards smart city strategies that emphasize sustainability, inclusivity, prosperity, and human rights.

The playbook outlines three key activities to maximize outputs while reducing inefficiencies and costs:

1. Collaborate with diverse stakeholders to build smart city projects, infrastructure and services
2. Expand the capacity of city staff for digital transformation.
3. Evaluate the need for technology and address equity, environmental sustainability and inclusion in smart city initiatives.

Establishing key performance indicators (KPIs) is crucial for measuring progress and demonstrating success. Each activity in the playbook includes core values, strategic goals, actions, recommendations, case studies, and a policy toolkit, aligning with UN-Habitat's people-centered smart city approach.

CITIES IN ACTION



The Riyadh Municipality achieved the "Innovation" rank in measuring digital transformation progress towards 2030
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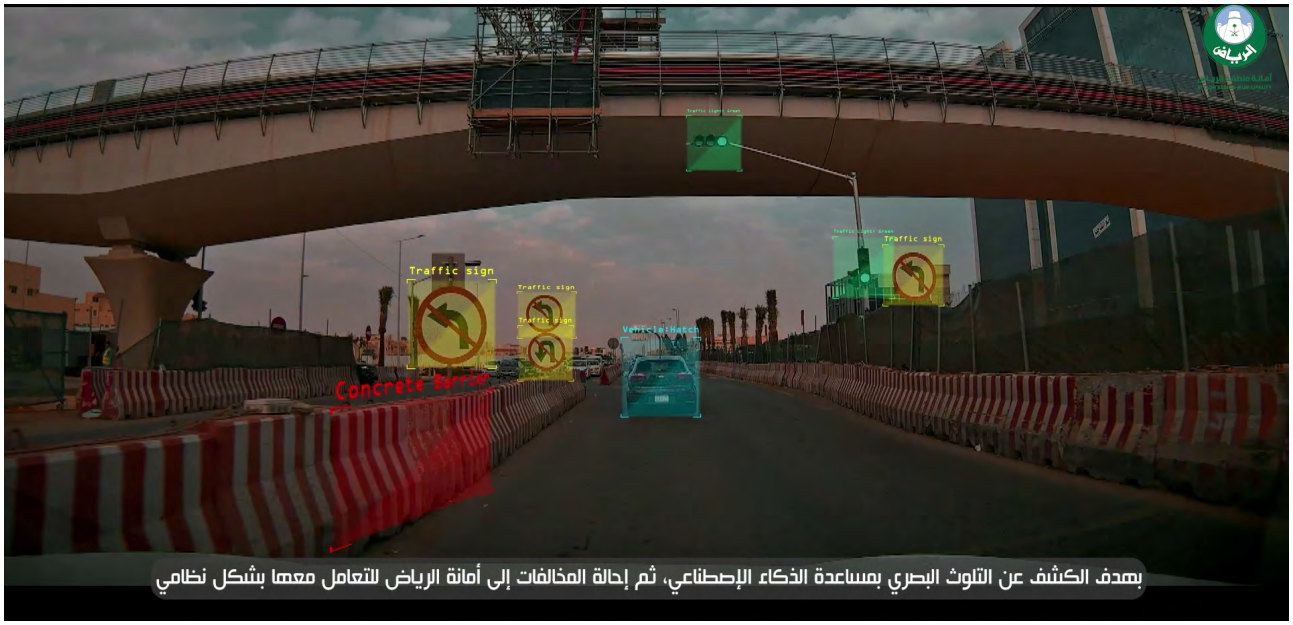
Improving Municipal Services and Enhancing Community Participation

Digital Innovation in Riyadh

Cities have always been competing to improve the efficiency of services provided to the residents in response to increasing challenges such as the expansion of the urban area, demand for infrastructure, public transport networks and other concerns. Such challenges have urged city administrations to expand their thinking to multiple fronts in order to achieve a balance that provides for the needs of residents and the surrounding environment, as well as improves overall quality of life. Digital transformation, however, has been one of these fields that has created new opportunities and potential for cities to enhance the well-being of society. Saudi cities have not been isolated from this endeavor at regional and international levels. Leading this effort, the Riyadh Municipality has worked on digitalizing its municipal services and harnessing technology to make Riyadh a smart and modern capital. Achieving the objectives of the Municipality comes from being in line with the Saudi Vision 2030 and striving to make the Kingdom a leading model in providing citizen-centered digital services to all beneficiaries.

To further upgrade and improve municipal work, the Municipality launched its digital transformation strategy in late 2022. Among the Strategy's goals is to improve the digital structure and raise operational



Using AI to detect and analyze urban violation and visual distortions across Riyadh city
©2024 Riyadh Region Municipality

efficiency through strategic pillars, the most important of which are promoting digital empowerment of the business sector, enhancing the geospatial dimension of systems and unifying communication channels with beneficiaries. In addition to this, it seeks to enable partnerships with interested parties, employing data and using emerging technologies to support decisions. The Municipality seeks to build a digital institutional base that meets its needs, enables it to provide simplified and advanced digital services, and provides reliable data to support decisions. The fruitful efforts came into existence in the presence of Riyadh in the IMD Smart Cities Index 2023. Riyadh maintained its position as the third smartest Arab city and ranked 30th among 141 cities worldwide. In the same year, the Municipality achieved the "Innovation Phase" among the top ten government agencies in the Digital Transformation Measurement Index supervised by the Digital Government Authority and achieved 91% of the United Nations Development Standards.

This article highlights some of the Municipality's most significant achievements in expanding and enhancing technology across various fields, launching many new electronic services, and using modern technologies and artificial intelligence. The Municipality also adopts the e-participation strategy to enhance interaction with the community and exchange ideas and proposals through digital channels such as consultations, surveys, and social media, which contributes to achieving the objectives of the digital transformation strategy.

The digital transformation journey has accomplished several achievements in the field of municipal development and urban planning, the most important of which are:

- In municipal control and enhancing the urban landscape, the Municipality launched the Smart Control System, which contributed to digitalizing various control tracks to enhance operational efficiency and increase compliance rates with regulations. This system harnesses artificial intelligence technology to monitor and address visual pollution by scanning the entire city using vehicles equipped with cameras for real-time monitoring.

- The Smart Control System has contributed to reducing visual pollution and raising the city's quality of life while providing enormous data that supports decision makers in planning and improving the Municipality's work in city administration.

- Concerning decision support and the operation of the city, the Municipality's lab, in partnership with "SDAIA", provides solutions to support the Municipality's decisions in the urban scene and traffic management, raising the quality of life and developing municipal services. The Municipality's lab focuses on enhancing analytical and forecasting capabilities, using smart city solutions, data analytics and artificial intelligence models. Such models are done through sharing technical expertise and proof-of-concept experiences of Smart City product use cases.

- In terms of digital municipal services, Riyadh Municipality launched the "Madinaty" application to

unify communication channels with users in one application for efficiency of use, as well as to increase interaction, create a smooth digital experience, and reduce input from users.

- In addition to this, the Municipality also launched a new version of the spatial portal that provides access to municipal information and sites' search and display options. The portal helps users-individuals, academics, real estate and engineering offices, explore any spot inside Riyadh using reliable satellite layers and images. The new portal version can directly track the schemes' status, land parcels, building systems, streets, neighborhoods, and government facilities.

- Like any city that seeks to be modern, Riyadh Municipality has launched the "Add an Idea" platform to involve the community in shaping the city's urban future. The platform aims to improve municipal services and the city's quality of life by presenting creative development ideas and valuable proposals.

In conclusion, Riyadh Municipality's efforts constitute a leading model for smart cities, as it has achieved tangible achievements in various fields of digital transformation. By developing the digital infrastructure, improving municipal services, and enhancing community participation, Riyadh has become a leader in providing modern services that keep pace with the aspirations of Saudi Vision 2030. These initiatives transform Riyadh into a modern digital city, enhance the community's well-being, and provide innovative solutions to urban challenges. As these efforts continue, Riyadh remains at the forefront of cities seeking a sustainable and developed urban future, making it a role model at the regional and international levels.





Key features and services of the newly launched 'My City' application for the residents of Riyadh
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Ras Al Khaimah Corniche
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The Digital Urban Districts
Initiatives by Algiers, Ras Al Khaimah, and Doha

This article explores the various ways in which Algiers, Ras Al Khaima, and Doha have approached the idea of digital innovation in an urban context. While Algiers focuses heavily on the inclusion of local talent and the development of tech startups, Ras Al Khaimah has introduced the world's first freezone dedicated to digital asset companies. In parallel, Doha has focused on developing a complete city district, which is supported by advanced digital infrastructure.

In line with the aim to diversify the city's economy, the "Wilaya of Algier" launched a Smart City project in 2017. The focus of the project was to enhance and optimize urban management processes, as well as improve the quality of life in the city. The components of the Smart City project were developed in light of a framework established specifically for the context of Algiers. Acknowledging its economic realities, the framework targets the challenges of building a smart city capacity in an emerging economy country such as Algeria. Described as the "Isolation, Dependency, and Lack of Confidence" (IDC) challenges framework, it seeks to address the isolation of the tech industry in the city, the dependency of local initiatives on global industries, and the lack of confidence within local firms to develop advanced large-scale commercial solutions. In addition, the Strategy also aims to address what it calls the 'cascading technology trap', that is, the gap between technological advancement and policy development, where the latter lags behind the

former and hinders the deployment of advanced technologies in public administrations.

The Algiers Smart City initiative works on all these fronts through various programs, keeping Transportation, Water, and Energy as the priority sectors for intervention. The implementation of the Strategy follows four pillars, focusing on the inclusion of local startups, establishing global partnerships, and retention of local talent. In 2018, the project launched two 'fab labs', an Experimental Laboratory and the Technology Innovation hub, to test smart city solutions. This was also accompanied by forming various partnerships and launching multiple startups, enabling actors in the tech industry to collaborate and collectively develop prototypes. The Covid-19 pandemic, however, delayed progress and the project is still pending completion.

Another case where a digital initiative focused on nurturing startups in the tech industry is in the UAE's Emirate of Ras Al Khaimah (RAK). Launched in 2023, the RAK Digital Assets Oasis was established as the world's first freezone dedicated to digital asset companies. It allows entrepreneurs to have complete business ownership and freedom over tax regulations, allowing them to establish their regulatory frameworks as long as they adhere to the country's criminal laws. Some virtual asset providers it supports include applications based on the metaverse, blockchain, utility tokens, and decentralized autonomous organizations (DAOs). Furthermore, it states that the business licenses in this freezone are not limited to companies in the traditional sense but also to other legal entities. The three primary categories for which it provides permits are Freelance, Digital Nomad, and Standard Company. To support businesses, the Digital Assets Oasis facilitates the acquisition of residence visas, establishment of company licenses, provision of office spaces, access to local banking services, and a wide range of digital assets and Web3 services.

The Digital Assets Oasis has partnered with universities and research institutions to drive knowledge and innovation and facilitate collaboration between businesses and world-class institutions. In addition, it offers an investment platform and partnership opportunities through its network of Ecosystem Partners. In doing so, the Oasis targets the digital industry from multiple angles, operating as an innovation-enabling freezone, subsequently playing a significant role in the global financial sector.

The city of Doha in Qatar emerges as another case where significant investment has been made in technology and urban infrastructure. The Msheireb Downtown is designed as a mixed-use urban district, embodying multiple principles of sustainability and digital innovation. Part of the Qatar National Vision 2030, the downtown consists of over 100 smart operating systems, including parking lots, over 650,000 Internet of Things (IoT) devices that support the monitoring and control system, and an automated waste collection system.

To support these digital systems, the downtown contains a comprehensive network of over 400 kilometers of fiber optic cables and 5,000 Wi-Fi points, enabling efficient management of municipal services. The buildings in the downtown area are optimized to



Algiers Smart Cities Global Technology & Investment Summit 2018
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reduce energy consumption while at the same time providing residents with access to data regarding heating, cooling, and lighting. The downtown also hosts a Tier-2 data center that guarantees data security and privacy. What makes this district unique as a Smart downtown is its distinct architectural language, staying true to the identity and history of Qatar. It effectively envelopes digital infrastructure in vernacular architecture, creating a template for a new model of urban living and smart community.

While Algiers and Ras Al Khaimah pave the way for the tech industry's future and concentrate on fostering digital entrepreneurship, Doha utilizes the industry's outputs and showcases how they can be embedded in day-to-day urban living.



Msheireb Downtown
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Project 3



Abu Dhabi Digital Twin 3-D snapshot
©2024 51Earth

Innovative Spatial Data Solutions for Efficient Planning and Emergency Response Capacity

Cases from Abu Dhabi and Hazmieh

One of the most crucial digital domains for cities to achieve comprehensive planning and efficient emergency response is solutions driven by spatial and geographical data. This article presents two cases of such spatial digital solutions. The first involves Abu Dhabi, where a digital twin of the city's built environment has been developed, offering a holistic visualization of the city to support evidence-based decision-making. The second case is from Hazmieh, Lebanon, where innovative digital solutions were developed during the COVID-19 pandemic to help municipal and medical teams mitigate the impacts of the crisis.

In 2022, the Department of Municipalities and Transportation (DMT) in Abu Dhabi launched the innovative "Abu Dhabi Digital Twin" project. This initiative is part of the city's ongoing efforts to enhance its quality of life and position itself as a global magnet for economic and industrial investments. The Abu Dhabi Digital Twin project represents a significant advancement in the emirate's digital and geographic information systems. By utilizing 3D augmented reality, this project aims to support and streamline

decision-making processes. It integrates advanced technologies such as aerial photography, LiDAR scanning, and game engines, setting a new standard for smart city infrastructure and augmented digital reality.

This project is the first of its kind in Abu Dhabi and provides a comprehensive and accurate digital representation of the emirate, including detailed 3D modeling of buildings. In addition to aiding the real estate market and highlighting landmarks, the project offers a detailed visualization of the interior of most buildings. These views facilitate internal navigation, which is crucial for emergency responses. The digital twin's spatial analysis tools are designed to inspect the effects of various urban planning scenarios, helping planners and decision-makers visualize and assess different options.

The project offers a synchronized digital representation of the emirate, allowing planners, engineers, specialists, and stakeholders from both the public and private sectors to explore and evaluate the emirate's development in 3D. This tool provides precise data and measurements essential for planning and operations across critical public sectors.

By integrating its outputs with various data systems, the project ensures continuous data updates. This includes information on lease contracts, rental and sale indicators, urban spaces, community facilities, building permits, asset management, commercial licenses, and inspections. This holistic approach supports comprehensive urban planning, asset management, and service delivery, underscoring the project's transformative impact on Abu Dhabi's infrastructure and development.

In Lebanon, the city of Hazmieh's GIS operations center, founded in 2015, utilizes high-resolution aerial images captured by advanced unmanned aerial vehicles (UAVs) to produce detailed, multi-use maps. These maps support daily operations and emergency responses, providing a strategic advantage in disaster management. During the pandemic, this system equipped with live field support, monitoring, and geospatial analysis enabled the municipality to promptly respond to the challenges posed by COVID-19.

One of the key applications involved regular inspections of food and health industries. A GPS data collector app installed on municipal police and health inspectors' phones allowed them to gather daily updates from food and health establishments. This data, synced in real time, ensured compliance with safety requirements and generated regular reports, helping maintain high public health and safety standards.

Another crucial use of the GIS system was the monitoring of COVID-19 cases. A map-based app used by hospitals and clinics tracked the locations of infected individuals and those in quarantine. Detailed information about patients helped identify virus hotspots and intensified disinfection efforts near points of interest like supermarkets and pharmacies. Heat-maps illustrated the spread patterns, aiding containment efforts, while personal data protection was strictly maintained.



Digital Twin of Abu Dhabi
©2024 Open Street Map contributors

To improve access to essential services during curfew or quarantining, the municipality launched an online map portal. This portal enabled residents to locate the nearest food shops, clinics, health centers, and pharmacies, minimizing travel distances and enhancing access to vital services during the pandemic.

In response to the economic crisis and the pandemic, Hazmieh also focused on managing the distribution of social care packages. The municipality formed a team to distribute these packages and food boxes to needy families registered in the GIS database, providing crucial support to vulnerable populations.

Real-time monitoring of hospital resources was another significant application. A monitoring system provided information on available beds and oxygen masks in nearby hospitals, helping the Red Cross and emergency teams respond quickly and efficiently during critical cases, particularly when hospital bed occupancy was high.

Managing disinfection operations was streamlined through an interactive mapping app. This app displayed building footprints in different colors to indicate disinfection status, ensuring thorough coverage and preventing missed areas, thus maintaining public health safety.

The municipality of Hazmieh has successfully promoted this spatial-data-driven response model, receiving recognition from other municipalities and the Lebanese Ministry of Health. Despite the financial challenges posed by the economic crisis, Hazmieh's approach remains a notable success story in a country facing severe pandemic impacts.



Electronic services by Hazmieh Municipality
©2024 Hazmieh Municipality

Project 4



Ben Guerir University Hospital
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A Digital Approach to City Management

Inspiring Models from Ben Guerir and Irbid

Digital transformation in municipal services is considered one of the most essential tools showcasing the advancement of city administrations in integrating technology into work processes and performance. This article presents two cases where public services have been digitized. The first case from Morocco looks into the city of Ben Guerir, where a digital solution in healthcare has been developed to enhance community participation and reduce the digital divide between residents. The second case is the city of Irbid in Jordan, where efforts are underway to transform its internal institutional mechanism into a smart and digital system, facilitating citizens' transactions quickly and ensuring the protection of data and transactions from loss.

Ben Guerir, a city north of Marrakesh in Morocco, is pioneering digital solutions to enhance citizen participation, particularly in the healthcare sector. Their approach focuses on building positive relationships between citizens and local authorities and assisting citizens using digital tools.

A major challenge in Ben Guerir has been the lack of

coordination between citizens and local hospitals. To address this, the city, as part of the African Smart Towns Network project (2019-2023), began developing a digital tool to allow citizens to book medical appointments online. This tool also creates a digital medical records database, enabling better follow-up by healthcare providers. The project involved collaboration between the local project partners, including Rhamna Province, the local hospital, public authorities, technical experts, and civil society organizations. Together, they identified the needs of the health sector and developed a digital solution to meet those needs.

During the consultation phase, a key finding revealed that many citizens from peri-urban areas struggled to use the digital app. To address this, the project team and the municipality employed social agents to assist citizens in scheduling their medical consultations. Funding was secured from the Rhamna Province to cover the operational costs of these community roles for two years to create sustainable youth employability.

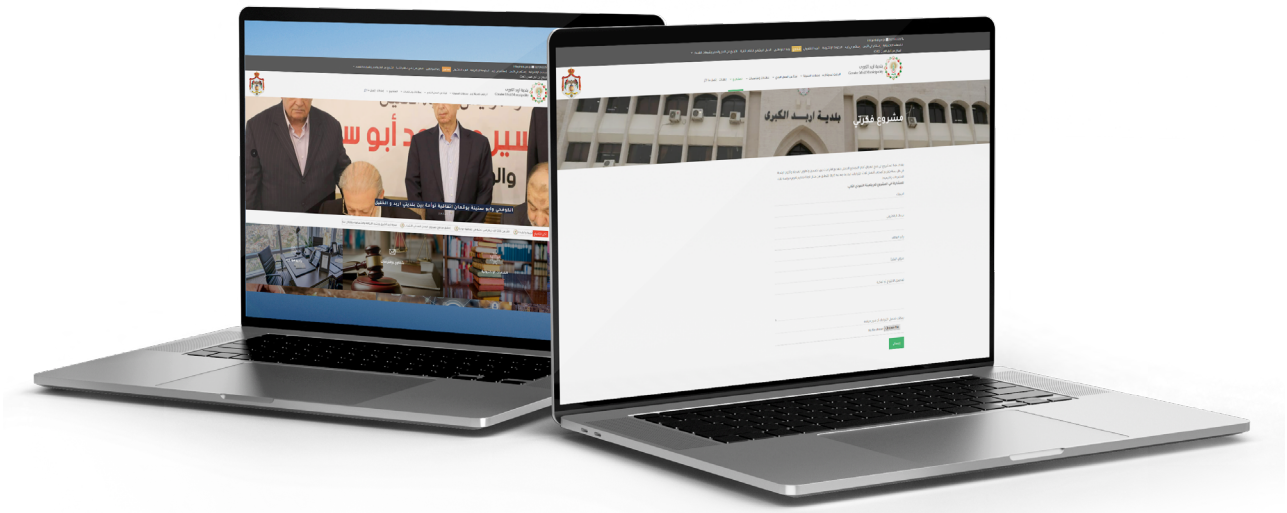
There are several lessons to be learned from the implementation process of this project. While it was expected that citizens would use the app to book appointments, many continued to visit the hospital in person. In light of this, the local hospital provided feedback for improvements to the platform to enhance its ease of use. Furthermore, existing social practices played a significant role, with several people relying on familiar local agents, such as women or younger people, for help.

The new medical appointment platform in Ben Guerir was set for public launch in 2023, pending approval from the National Commission for the Protection of Personal Data. Hospital staff and 50 community agents have been trained to use the app. The local municipality will support the solution for an initial two-year period, covering hosting and maintenance costs, while the province will finance the salaries of the community relays.

When it comes to Greater Irbid Municipality's efforts in smart city management, digital transformation is not just about technology; instead, it involves redefining the municipality's method of functioning. It is a strategic and organizational shift aimed at creating new institutional and governance mechanisms for municipal sectors, supported by the inclusion of technology. In this context, the municipality established the Information Technology and Digital Transformation Unit.

The Greater Irbid Municipality initiated a project to digitize all departments' information using Geographic Information Systems (GIS). The first phase of the project was completed in November 2023, which included digitizing all information in the Planning Department.

The project involves updating the GIS system and developing comprehensive land use plans to enable all municipal districts to access those within the Greater Irbid boundaries and issue zoning plans electronically.



Mockup image of Irbid Municipality website
©2024 Irbid Municipality

So far, the municipality has digitized seven of its 24 districts, allowing these administrations to issue zoning plans promptly.

The project aims to enable citizens to manage their requests and make online payments seamlessly. Additionally, it aims to create a central database containing the municipality's information, allowing citizens to access important landmarks within the municipality and, more broadly, within the city. Employees and citizens alike can easily navigate city landmarks by filtering them into searchable layers, enabling searches by name, district, neighborhood, plot number, or landmark name, with specific access granted to each employee according to their job role.

The second phase will include digitizing information from other executive departments such as the Directorate of Public Works, Infrastructure Project Execution and Maintenance, Tenders and Procurement, Investigations and Building Taxation, the Environmental Department, and the Stormwater Drainage Projects Department.

Moreover, the municipality seeks to improve citizens' services by implementing tools that facilitate and expedite the completion of their transactions and protect them from loss. The municipality collaborates with national institutions like the Ministry of Digital Economy and Entrepreneurship, the Ministry of Local Administration, and the private sector to implement a pioneering project to be applied to all municipalities in the kingdom. The municipality will launch 19 e-services in the first and second phases, with the total number expected to reach 44.

Regarding the community's e-participation in enhancing the city's quality of life, the municipality launched the "My Idea Project" platform to open the door for the local community to submit ideas for city improvement and development. Annually, the municipality honors the top three positive and practical suggestions through a judging committee that reviews and evaluates these proposals.

Both the cases from Ben Guerir and Irbid indicate the volume of initiatives surfacing in the Arab world when digitizing municipal services. Supported by clear policies and strong institutional systems, technological progress has the potential to benefit cities such as these, positively impacting the relationship between citizens and public entities.



Yalla Bus Map
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Grassroots Digital Solutions

Mapping Mobility in Cairo and Beirut

Digital mobility solutions and Geo-data sharing are pivotal in advancing the shift towards sustainable transportation. Integrating data from various transportation modes is essential for enhancing urban mobility inclusivity and efficiency while minimizing environmental impact. This article explores how local movements and grassroots initiatives contribute to promoting sustainable transportation. It discusses Cairo's use of a mobile app to evaluate walkability and Beirut's interactive digital bus network map development.

In an ambitious effort to make Cairo a pedestrian-friendly city, the Walk21 Foundation, in collaboration with Alstom, partnered with Transport for Cairo (TfC) and the NADA Foundation to pilot the Walkability App. This initiative aims to understand and improve the perceptions of walkability across Cairo's diverse urban landscape. The field-based comprehensive study gathered insights into user experiences, safety concerns, and accessibility challenges, offering valuable pathways for the creation of a safer, more accessible urban environment.

The Walk21 Foundation's partnership with Alstom focuses on mapping public transit catchments for walkability worldwide, seeking the most effective ways to increase ridership and user satisfaction through

better walkability. The Greater Cairo Region (GCR) has the potential to contribute to this global study by mapping transit catchments and demonstrating the impact of targeted, responsive investments. Some Egyptian organizations, such as TfC and NADA Foundation, are using the Walkability App for the first time in the region, benefiting from the data to accelerate GCR's sustainable mobility vision.

The 'digital' Walkability App presents a unique opportunity to assess user perceptions of walking experiences alongside ongoing infrastructure development in the GCR. It identifies deficiencies in pedestrian infrastructure, especially in new urban communities prioritizing cars over pedestrians. The app also evaluates walking experiences in inner-city areas, providing a comprehensive understanding of walkability across different districts in the GCR. Piloting the Walkability App in the GCR builds the capacity of public institutions and local NGOs to adopt a data-driven, evidence-based approach to pedestrian infrastructure development. The results support planners and policymakers in making informed decisions for improving pedestrian infrastructure and, in turn, creating a more walkable city.

The project's main objective is to develop a proof-of-concept and pilot the Walkability App in Cairo by assessing user perceptions of walkability in inner and outer city contexts. The Walkability App collects four main types of data for in-depth, pedestrian-centered walkability assessments: Pedestrian Profile (age, gender, and (dis)ability), Walk Context (purpose, route choice, group size, and familiarity with the place), Pedestrian Experience(satisfaction and concerns regarding the public space).

In addition to these four main types of data, which are self-defined and collected by participants or surveyors, the Walkability App automatically adds the location, time and date, as well as the current weather conditions of each observation.

The Walkability pilot study in the Greater Cairo Region highlighted critical factors affecting pedestrian experiences, safety, comfort, and accessibility. Cairo can embark on a transformative journey toward a more walkable future by promoting ongoing research, localized advocacy, and targeted infrastructure improvements. This effort aligns with broader goals of climate change mitigation and low-carbon recovery, ultimately fostering healthier, more sustainable urban environments that benefit residents and the planet.

The informal bus system faces many issues in Lebanon, particularly in Beirut. It is slow, unpredictable, and poorly maintained. Moreover, one needs to know its routes and stops, which is difficult without official route maps. Beirut's bus network is run by private operators and drivers, who operate in an ad-hoc manner, follow no officially assigned stops or schedules. To address such issues, several initiatives have emerged from ongoing grassroots efforts to improve Lebanon's public transportation system.

In 2017, a group of fresh university graduates launched a startup called Yalla Bus, funded through grants and sponsorships. The group wanted to help reduce traffic, protect the environment, and provide affordable transportation alternatives; however, they soon learned they needed a route map.

According to a Yalla Bus study, 25% of Lebanon's population currently uses buses. Of the remaining 75%, 80% would consider using buses if significant improvements were made in the sector, based on a survey of 1,000 people. The Yalla Bus team continues to work on rolling out their mobile app to provide a reliable alternative for navigating the city.

To create a reliable route map, the team installed GPS trackers on buses while commuting on the same bus and manually drafting the route map. The GPS trackers were connected to the end users' mobile phones, showing updated bus locations. The Yalla Bus app offers users real-time bus options and a comprehensive city transportation map. Yalla Bus started its online bus map two years after the launch and distributed 3,000 paper copies at local universities. Yalla Bus is not the only initiative that has been developed in Lebanon. In 2015, the Bus Map Project launched the BusMap.me platform, supported by grassroots volunteer initiatives of the EU SwitchMed project. It has been mapping Lebanon's formal and informal public transport systems, relying on volunteers to crowdsource GPS data and annotate transit routes with photos, tips, and stories. The aim is to create a dynamic and comprehensive transit map.

In Beirut, the government has been open to initiatives by volunteer organizations to collect and maintain data. Nevertheless, these mapping initiatives require greater attention from local and national authorities to improve the transportation system in the long run.



WALKABILITY

WALKABILITY APP

Participatory Walkability Study

Cairo, Egypt

November 2023

WALK21 Transport for Cairo مواصلات للقاهرة Nada ALSTOM

Project 6



Smart Makkah Operations Center
©2024 Saudi Data & AI Authority

Smart Tools and the Use of AI in Makkah Enhances Safety for Hajj Pilgrims

The recent Hajj pilgrimage of June 2024, which hosted over 1.8 million pilgrims, saw the use of 32 modern technologies, 17 of which were developed this year. This article demonstrates the city of Makkah's significant advancements in using AI and digital technology for operations management during Hajj. These efforts align with the goals of Saudi Vision 2030, aiming to enhance the pilgrim experience through innovative solutions and advanced technological integration. The following initiatives play a crucial role in successfully managing the Hajj season by ensuring pilgrims' safety, comfort, and efficient movement.

Key Initiatives and Innovations:

Smart Makkah Operations Center (MOC), launched in Makkah by the Saudi Data and Artificial Intelligence Authority (SDAIA) in collaboration with the Ministry of Interior, works to enhance crowd management during the Hajj pilgrimage. This advanced center, situated in Mina's Command and Control Center of Public Security, employs cutting-edge AI technologies to monitor and manage the massive influx of pilgrims. These technologies provide real-time data and analytics, aiding decision-making processes to improve the safety and comfort of Hajj pilgrims. The center monitors various platforms and offers precise

analyses of their workflow, ensuring efficient crowd management.

BASEER Platform is the first real-time computer vision system in Saudi Arabia and one of the largest crowd management systems in the Middle East. It manages crowds within the Grand Mosque, regulates their movements, and facilitates vehicle flow. The platform uses national AI algorithms to support government agencies during Hajj, aligning with Saudi Vision 2030's Program for Serving the Guests. BASEER can quickly identify pilgrim behaviors, such as falls or injuries, ensuring prompt response and maintaining a safe environment. Additionally, it counts the number of pilgrims entering the Grand Mosque, manages sanctuary capacity, and effectively distributes worshippers.

Sawaher Platform: Launched by SDAIA in partnership with the Ministry of Interior, it focuses on smart surveillance and crowd management using advanced AI technologies. It provides detailed analyses of support services, including vehicle movement regulation and crowd management at the holy sites. The platform features an advanced analytics dashboard that offers data on indicators such as vehicle waiting times, dispersal indicators, and pilgrim mobility at key locations. This data helps authorities implement effective dispersal plans and manage pilgrim numbers efficiently.

E-mobility solutions: Besides crowd control and digital social services, e-mobility solutions are also employed to help elderly people and those with disabilities. These include 50 golf carts and over 8,000 scooters located across the Holy Mosque, equipped with safety tools to protect riders and other pilgrims. A digital application, 'Tanqol, ' has been developed to allow e-scooters to perform rituals, and QR codes have been printed on signage directing pilgrims toward the pickup point of scooters.

Other tools, developed specifically for ease of regulation and to ensure compliance with Hajj policies, include the use of 'virtual glasses' to facilitate vehicle inspection retrieving vehicle data within seconds. Authorities also used a facial recognition system to monitor crowds and swiftly respond in the case of accidents and other disruptive incidents. Drones were utilized to scan road networks, as well as to transport blood units and laboratory samples.

The successful implementation of these platforms is a result of collaboration between several entities, including the Saudi Company for Artificial Intelligence (SCAI), the Saudi Telecom Company (STC), and the Saudi Technology and Security Comprehensive Control Company (Tahakom). Under SDAIA's guidance, these organizations developed and deployed smart surveillance cameras for the Sawaher project. Integrating digital applications and AI technologies in crowd management during Hajj exemplifies Saudi Arabia's commitment to creating safe, smart cities. The Kingdom aims to reduce incidents, improve response times, and enhance operational efficiency by utilizing advanced technology in public safety and crowd management operations. This approach supports data-driven decision-making and fosters positive integration between community members and security forces.



A set of advanced technical services developed by SDAIA to serve the pilgrims of the Makkah during Hajj 1444 AH
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OUR NEWS

FIRST ADVISORY BOARD MEETING OF THE ARAB URBAN DEVELOPMENT INSTITUTE

The advisory board of AUDI held its inaugural session on Tuesday, Muharram 3, 1446 AH, corresponding to July 9, 2024. The meeting was chaired by His Royal Highness Prince Dr. Faisal bin Abdulaziz bin Ayyaf, President of the Arab Urban Development Institute and Chairman of the Advisory Council, with the participation of council members Dr. Anas Almughairy, Director General of the Institute; Dr. Yasser Al-Sheshtawi, an expert in Arab urban development; Mr. Tom Murphy, former Mayor of Pittsburgh; Dr. Fouad Malkawi, urban planning and finance expert at the World Bank; Professor Robert Cervero, urban planning expert at the University of California; and Dr. Naela Akrimi, Director of International Cooperation at the Association of Dutch Municipalities and Director of Capacity Building at the United Cities and Local Governments (UCLG).



AUDI Advisory board meeting presentation
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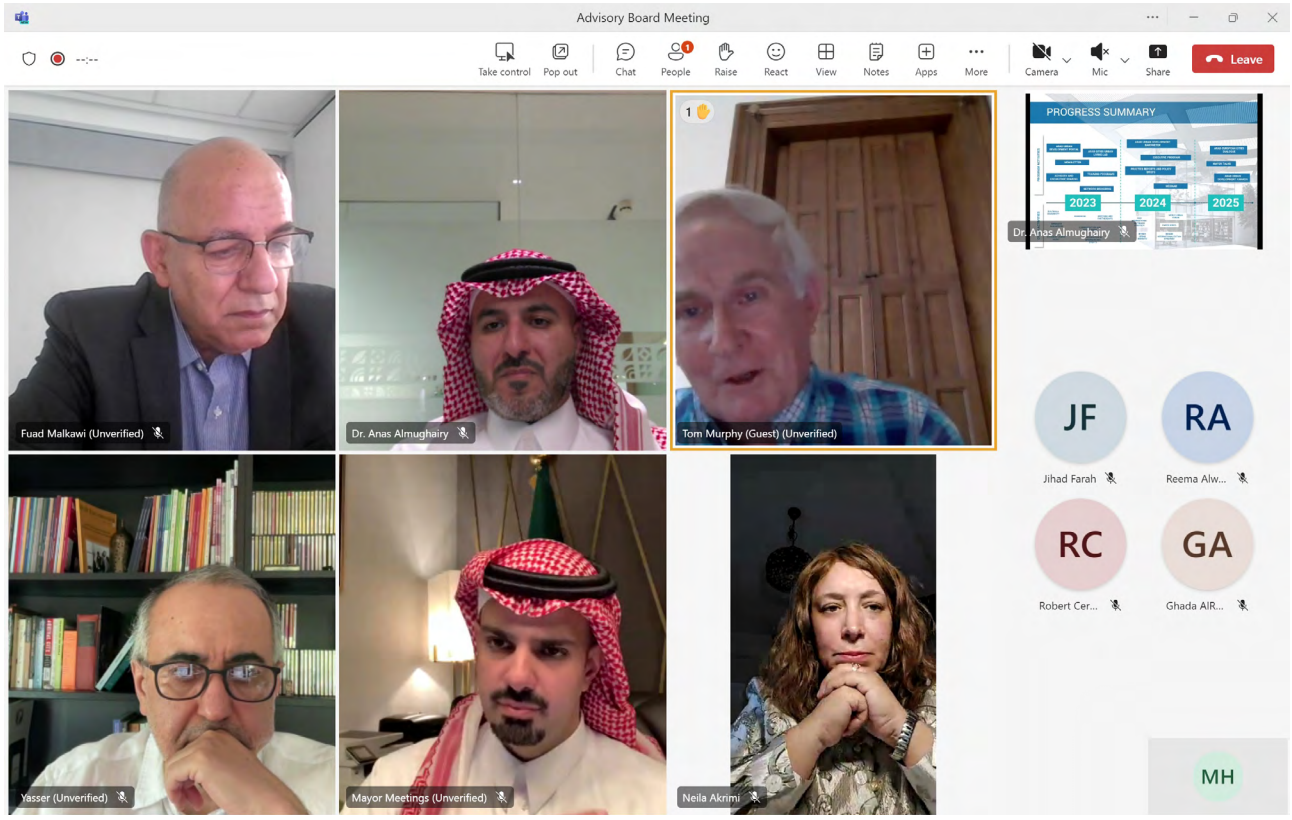

AUDI Advisory board meeting
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The meeting was initiated by Prince Dr. Faisal bin Ayyaf, who welcomed the board members and thanked them for their attendance. He emphasized that the board would play a crucial role in guiding the institute to achieve its strategic goals and benefit from the insights and expertise of its experienced members. The aim is to support the institute's efforts in helping Arab cities identify and address their challenges, regardless of their differing conditions, sizes, and stages of urbanization.

During the meeting, Director General Dr. Anas Almughairy reviewed the topics on the agenda, presenting the institute's strategy, programs, activities, initiatives, and global engagements.

The session included contributions from the members who shared their perspectives on the institute and its programs. Key recommendations discussed included focusing on existing partnerships with European cities and setting future goals for expanding collaborations with regions in Asia, Africa, and the Americas. There was an emphasis on building relationships with major investment companies to support and sustain the institute's programs. The board also recommended addressing the challenges affecting Arab cities by providing policy recommendations for effectively dealing with issues such as climate change, as well as offering a platform to provide and classify regional services and knowledge. This would supply information to donors, positioning the institute as a reliable partner for cities. Additionally, the board suggested enhancing city capabilities by creating a platform to support and develop their capacities, helping them achieve their goals. It also recommended establishing unique programs that would make the institute a leader in its field and maintaining continuous communication with member cities for effective impact. Finally, leveraging the institute's status as a global organization to connect and empower communities and cities to foster collaboration and innovative ideas was emphasized.

Prince Dr. Faisal bin Ayyaf concluded the meeting by stressing the importance of ongoing communication with the board members, ensuring that it remains a strong support for the institute in its efforts to achieve its ambitious vision of developing Arab cities and improving their quality of life.

AUDI MEETS WITH HIS EXCELLENCY THE QATARI MINISTER OF MUNICIPALITY

A delegation from the Arab Urban Development Institute, led by the Director General of the Institute, Dr. Anas Al-Mughairy, accompanied by the Director of Institutional Development and Training, Dr. Montaser Al-Hayari, the External Relations Officer, Ms. Alba Fernandez, and Engineer Abdulrahman Al-Sayed, visited the headquarters of the Qatari Ministry of Municipality. They met with His Excellency the Minister of Municipality, Mr. Abdullah bin Hamad Al-Attiyah, in the presence of Engineer Ali Mohammed Al-Ali, CEO of Qatari Diar Real Estate Investment Company, and Mr. Hamad Al-Buraidi, Director of International Cooperation at the Ministry of Municipality.

The purpose of this visit was to explore mutual cooperation opportunities between AUDI and the Ministry that serve the municipal sector, enhance international relations and the global presence of municipalities. During the meeting, AUDI presented its municipal leadership development programs.

His Excellency the Qatari Minister of Municipality emphasized the importance of Qatari municipalities participating in AUDI's initiatives and benefiting from its programs and services. He also highlighted the need to enhance communication between them and showcase the distinguished practices of Qatari and Arab municipalities at local and global levels for mutual benefit.



AUDI's meeting with His Excellency the Qatari Minister of Municipality
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A STRATEGIC PARTNERSHIP TO PROMOTE URBAN INNOVATION AND MANAGEMENT BETWEEN AUDI AND SALAR INTERNATIONAL

SALAR International

The Arab Institute for Urban Development has signed a partnership with the Swedish Association of Local Authorities and Regions (SALAR International) to implement joint initiatives and enhance cooperation in developing urban management practices and innovation for municipalities.

This partnership represents a significant step towards strengthening cooperation between Arab and European cities through the exchange of experiences and expertise. It provides an opportunity for municipal leaders to learn about best practices in the fields of smart and sustainable cities and to organize global visits and field studies as part of the Urban Innovation and Management Program. Additionally, the partnership aims to implement joint initiatives to develop the institutional capacities of Arab cities, enhancing their ability to address urban challenges and achieve sustainable development.

This partnership comes at a time when cities are facing increasing challenges that require the adoption of innovative and sustainable solutions, which both parties aim to achieve through this constructive cooperation.

SALAR International is one of the institutions of the Swedish Association of Local Authorities and Regions and works on the institutional development of municipalities. As one of the oldest associations of local governments in the world, it acts as a strategic partner in identifying urban needs and providing support to develop the capacities of municipalities and local authorities worldwide. Its focus areas include supporting local development, improving effective city management, building the capacities of municipal staff, and collaborating with international partners to share the best Swedish practices in local city management.

AUDI IS A PARTNER IN THE ARAB MAYORS ACADEMY

The institute participated in the first session of the Arab Academy for Secretaries and Municipal Leaders in its inaugural course for 2024, held in Beirut from 17th to 18th Muharram 1446 AH, corresponding to 23rd to 24th July 2024. The event was organized by the United Nations Economic and Social Commission for Western Asia (UNESCWA) in partnership with the institute and regional and international organizations such as the United Nations Human Settlements Programme (UN-Habitat), the United Nations Office for Disaster Risk Reduction (UNDRR), the United Cities and Local Governments of the Middle East and West Asia (UCLG-MEWA), and others. The first course of the academy was attended by a group of city leaders from Iraq, Jordan, Lebanon, Egypt, Tunisia, and Morocco.

Through its participation, the institute aims to enhance cooperation between international and regional organizations in joint efforts, contribute to the formulation of policies and strategies for municipal work, and facilitate the exchange of experiences and knowledge among Arab city leaders.

Additionally, during its participation, the institute held numerous meetings with global organizations and networks to coordinate joint initiatives and projects that contribute to the development of cities and improve the efficiency of Arab municipalities.



Representatives of international organizations and leaders of Arab cities at the meeting of the Arab Academy of Secretaries and Municipal Work Leaders
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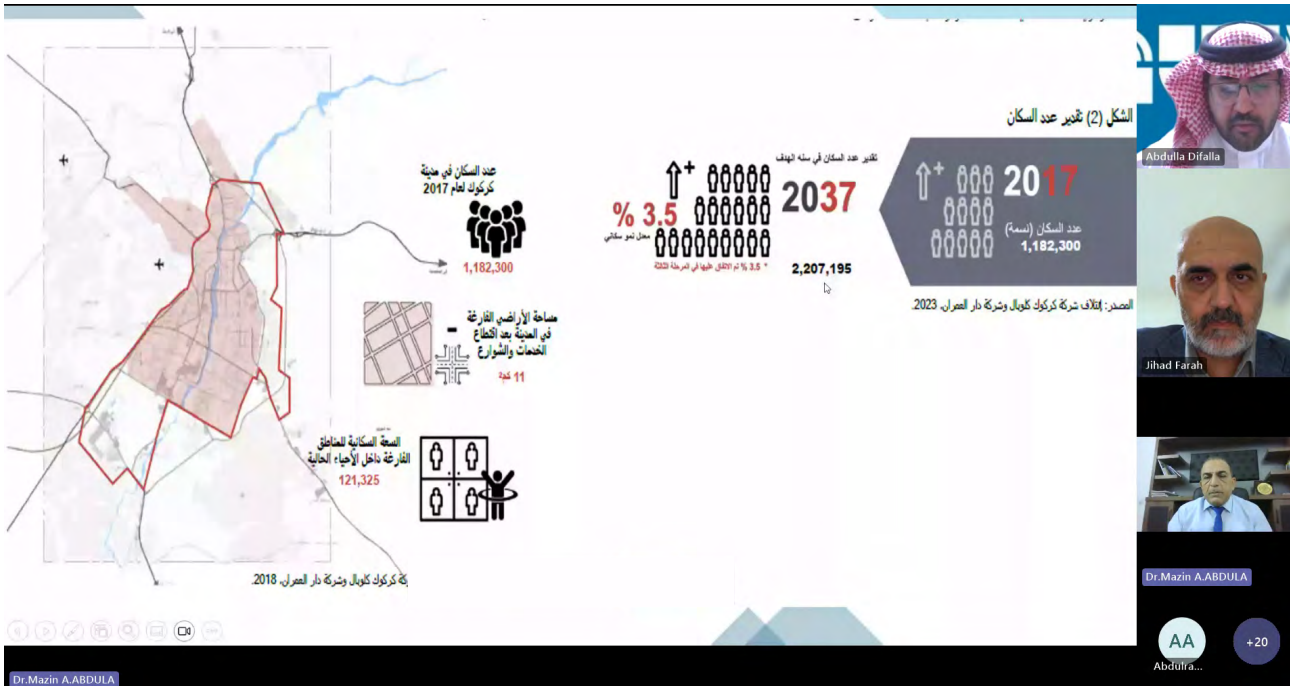
CITIES IN ACTION: WEBINAR PREPARATION OF PLANS FOR THE CITY OF KIRKUK

The Arab Urban Development Institute organized its third webinar in the monthly "Cities in Action" series on the evening of Tuesday, 19 Dhu al-Hijjah 1445 AH, corresponding to June 25, 2024. The meeting was attended by a number of specialists and those interested in urban development and city planning. The meeting was initiated by Dr. Abdullah Dhif Allah, Professor of Urban Planning, who provided an introductory overview of the "Cities in Action" series, highlighting its importance in enriching discussions among specialists and those interested in urban development from all Arab countries. He emphasized that the expected benefit from these meetings lies in learning about pioneering urban development projects and exchanging ideas on working mechanisms and success factors.

The meeting began with a discussion about the city of Kirkuk and the opportunities and challenges in preparing its city plan, presented by Dr. Mazen Abdel Wahab, the supervisor of the project for developing and updating the general plan for the city of Kirkuk. He pointed out that Kirkuk represents a small-scale version of Iraq due to its cultural, ethnic, national, and religious diversity, as well as its variety of oil and agricultural resources.



'Cities in Action' Webinar session on preparation of plans for the city of Kirkuk
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Poster for the 'Cities in Action' Webinar session on preparation of plans for the city of Kirkuk
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Dr. Mazen reviewed the general plan, starting with the initial vision for the city, which aims to encourage and enhance a good quality of life for Kirkuk's citizens in the long term by integrating social inclusion, economic development, and environmental sustainability in the city and its expansion areas, helping to create a distinctive identity for the city.

He mentioned that the plan includes a set of main goals to achieve sustainable development for Kirkuk, such as encouraging social inclusion, enhancing economic development, promoting sustainable development through improved public transportation, ensuring more effective land use, developing flexible shared use, caring for the natural environment and cultural heritage of the city, as well as establishing a "green city" through a connected network of roads and green spaces, improving existing housing and providing new housing for expected growth, enhancing future development of the city center and commercial services, and presenting proposals to develop the city's institutional capacity.

He explained that the general plan focuses on taking a participatory approach involving the community and individuals, administrative entities, and higher authorities, and engaging different disciplines to enrich the outputs. He also reviewed the methodology for preparing the city's development strategy and its stages, detailed design plans, the factors and challenges faced by the city in expanding the plans, and finally, presented the urban investment strategy and major investment opportunities that include residential cities, tourism projects, agricultural industries, and petrochemical industries.

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