The Happiness Impact

Dubai's journey towards becoming the happiest City on earth by embracing technology innovations and coalitions as key drivers of city experiences

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The challenge of delivering happiness

We are living in a new age where social and economic goals are becoming intrinsically linked, forcing the old paradigm of divided social and commercial interests to change rapidly. Governments have long recognised that they also need non-governmental partners in order to drive greater and more sustainable results to their citizens. On the other hand, private sector organisations realise that they need to work with a broader range of constituents, and with a broader set of objectives, to satisfy the needs of their customers and their stakeholders. Citizens, employees and consumers are demanding that social, environmental and economic goals should be mutually reinforcing.

These shared objectives can only be achieved if the different types of organisations involved leverage mutually beneficial relationships with societal, public and private sector actors. When their efforts intersect, all parties can bring resources and skills to bear in pursuit of common interests, generating enduring positive impact to the markets and communities they serve.

We call this **Impact Economy**

Within this new paradigm, a key driver of success (or failure) for the achievement of these common goals is how each one of the constituents embrace technology as an enabler of shared-value creation. With the exponential increase of connectivity and unprecedented availability of data, the world is getting smarter. Collectives of individuals sharing similar interests – and demands - are getting smarter. Consequently, cities are getting smarter. It is no longer enough to promise safe roads and clean parks: on top of this, governments must now be able to deal with immense amounts of

raw data produced every second, extract trends and conclusions and empower decision makers to react properly and promptly, allowing efforts and resources to be better allocated and public services to be more effectively delivered.

A smart city is only truly smart if it anticipates urban challenges and continuously improves the quality of life for its citizens, regardless of temporary – and often alternate - political ideologies and agendas. Ultimately, if it makes those who live and interact within its boundaries… happy.

> "A smart city needs the capacity to sense a current condition, interpret the resulting data to find patterns, and react – or create the capacity for city managers to react – appropriately."
>
> Dietman Offenhuber, Professor at Northeastern University, Boston

From city enablement to generation of Positive Impact

In order to meet these new demands and expectations from citizens and transients – thus making them happy - a new way of thinking about the creation of social, economic and environmental value is required. Cities like Amsterdam – where link-ups between local companies, the government and citizens have grown into a platform with more than 100 partners; Manchester – where a large number of public bodies are committed to sharing data, resulting in projects aimed at making the city easy and navigable; or Barcelona - focused on using technology to make public and social services more transparent and participatory while encouraging contactless connections across the city to make life easier for citizens; all of them have understood the importance of creating multi-actor coalitions and enabling platforms to support the government generate enduring positive impact on the happiness of its people.

But what lessons can be learnt from the successful experiences of these early adopters? Can they be replicated elsewhere under different economic, social, political and cultural conditions and dynamics? Palladium research suggests that some common practices are being consistently applied by the managers of these cities – as well as by other public and private sector organizations around the world focused on delivering enduring positive impact - and could be extremely useful to other municipal governments interested in exploring how technology and cross-sector partnerships can help them increase the value delivered to their citizens:

1. **Embedding Positive Impact into strategy.** City managers make explicit what impact they aim to create and embed it into the core of their government strategy (objectives and priorities).

2. **Establishing enablement platforms.** Platforms that stimulate the co-creation and co-delivery of new business models and innovative financing mechanisms to achieve these objectives and priorities are made available.

3. **Encouraging the formation of coalitions.** Formal processes and governance mechanisms to facilitate the establishment of coalitions, collaborations and/or partnerships between government, society and private sector to effect system-wide transformational changes are created (often quantifying the benefits and costs for all actors).

4. **Coordinating execution at scale.** A portfolio of large-scale initiatives and programs that ensure clear accountability for and effective implementation of the chosen priorities is actively managed through central coordination (a specialized government body, a cross-sector committee, etc.).

5. **Measuring and evaluating impact.** System-wide, outcome-focused metrics and goals are defined and tracked periodically (and sometimes even made public) to evaluate progress and make adjustments in line with the long-term impact expected to be generated.

Implemented in a variety of ways and with different levels of complexity - based on the maturity of each constituent as well as the availability of resources across the system -, these practices are starting to reshape the relationship between those who govern and those who are governed, bringing new and innovative ways of dealing with the so-called "wicked challenges": chronic urban, environmental and social problems that can't be solved without the active participation of all the different stakeholders affected by them.

Amongst all these success stories, however, one has set itself the ambition of rising above the rest when it comes to generation of public wellbeing through the embracement of technology and coalitions: Dubai.

"Our ambition is to touch the life of every individual – to achieve a happier life for all."

His Highness Sheikh Mohammed Bin Rashid Al Maktoum
UAE Vice President, Prime Minister and Ruler of Dubai.

Smartness as a driver of happiness

The United Arab Emirates, and Dubai in particular, have taken major strides in the digitization of public services, processes and assets, and have emerged as a regional leader. During the past two decades, numerous digital transformation initiatives in the city drove public acceptance and adoption of ICTs in all aspects of life. Today, Dubai, a city of 2.5 million inhabitants, has one of the highest levels of ICT adoption in the region, both by the public and the government. Nevertheless, for His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and The Ruler of Dubai, technology, rather than being the main goal itself, must be considered a platform for solutions that contributes to a much bigger aspiration: the enablement of happiness.

With this in mind, The Smart Dubai initiative was born with a clear goal: to make Dubai the happiest city on earth. Launched in March of 2014, it embarked the city on a smart transformation through several tracks including legal, governance, infrastructure and services among others. Since then, it has witnessed exceptional growth in the availability and quality of digital services, contributing to more efficient and improved city experiences for the government, private sector and individuals. Smart Dubai focuses the city's unified effort towards its most valued asset - its people. While playing a pivotal role in guiding and enabling the city's ongoing digital transformation across all sectors, the impact the city can create with the goal to drive happiness is enormous, and is growing tremendously each year.

With a team of professionals led by Her Excellency Dr. Aisha Butti Bin Bishr – Director General of the Smart Dubai Office with 20 years of experience in information, communication and technology (ICT) development in public and government sectors – the Smart Dubai initiative is a great example of how each of the 5 practices previously mentioned can have a significant impact on the quality of life of a population. The following pages will describe in more detail each one of them.

1. Embedding Positive Impact into strategy

Dubai's vision of a smart city was conceived several years before the official launch of the Smart Dubai initiative. It derived from the need of anticipating and addressing several emerging urban challenges associated with being one of the fastest growing cities globally. Population growth – from a small town of 80 thousand inhabitants back in the 1970's to a city with a population of approximately 2.5 million people; economic competitiveness – the challenge of maintaining the status of a world-renowned economic hub and a top touristic destination targeting 20 million visitors per year by 2020; environmental sustainability – the need of reducing CO_2 emissions per capita, one of the highest rates of in the world; and quality of life – ensuring "inclusive" happiness for a population of more than 200 nationalities living and working in Dubai. These are just some of the challenges that motivated the city's leadership to adopt a breakthrough approach towards municipal planning, development and management enabled by leading edge technology and partnerships.

The first phase of Dubai's smart journey was focused on establishing the foundations of a smart city: its technological infrastructure, its regulatory frameworks and the digital awareness by government bodies and the wider society. With more than 100 initiatives in areas of infrastructure, urban planning, transport, electricity, communications and economic services, the efforts were distributed across six dimensions within the city:

I. **Economy**: Innovative economic conditions fuelling entrepreneurship & global competitiveness.

II. **Governance**: Innovative, transparent government services with public, private & civil engagement.

III. **Environment**: Innovative resource, pollution & asset management for sustainability.

IV. **Living**: Exceptional quality of life, accessible education, culturally vibrant lifestyle.

V. **Mobility**: Seamless, efficient transport of people & movement of ideas enabled by innovative infrastructure.

VI. **People**: Culture of continual learning, innovating & participating in an inclusive society.

Our vsion is to make Dubai the happiest city on earth

Our mission is to create happiness, by embracing technology innovation-making Dubai the mostefficient, seamless, safe and **Impactful** experience for residents& visitors.

Dubai's leadership towards digital and smart government transformation ended up playing a critical role on influencing the national government of the UAE, driving more digital services and technological innovations across the country. The results speak for themselves:

- UAE was ranked as Number 1 in the world by WEF in The Global IT Report 2016 for ICT use & government efficiency.

- Approximately 95 percent of all public services (more than 1,000 government services) are available electronically.

- Dubai ranks second worldwide in "Government Success in ICT Promotion" (WEF, 2015b).

- The UAE is among the twenty highest ranked countries in "Online Service Delivery" according to the UN E-Government rankings (UNDESA, 2014).

- Internet penetration stands above 90 percent while the penetration of mobile subscriptions is close to 117 percent (International Telecommunication Union, 2015).

- Close to 70 percent of the population are active on social media, including engagement with government (Salem, 2014).

After all these achievements, Dubai is today very well positioned to ignite the next phase of its smart transformation agenda. The new 5-year strategy for the period 2017 – 2021 will see a significant shift from enablement to **impact**. The intentional creation of social, environmental and economic value is at the core of the new plan, and positive impact has been chosen as the overarching principle that guides the different priority areas grouped by 4 strategic pillars:

I. **Efficient city resources**

II. **Seamless daily life services**

III. **Safe people and information**

IV. **Impactful business and life experiences for all**

The strategic objectives, KPIs and initiatives have been defined based on their contribution to 3 types of quantifiable outcomes:

CUSTOMER IMPACT
City services are more efficient and seamless, saving time and money while delivering delightful experiences.

FINANCIAL IMPACT
Efficient city services enable cost savings in all industries while insights from data drive innovation stimulate economic growth
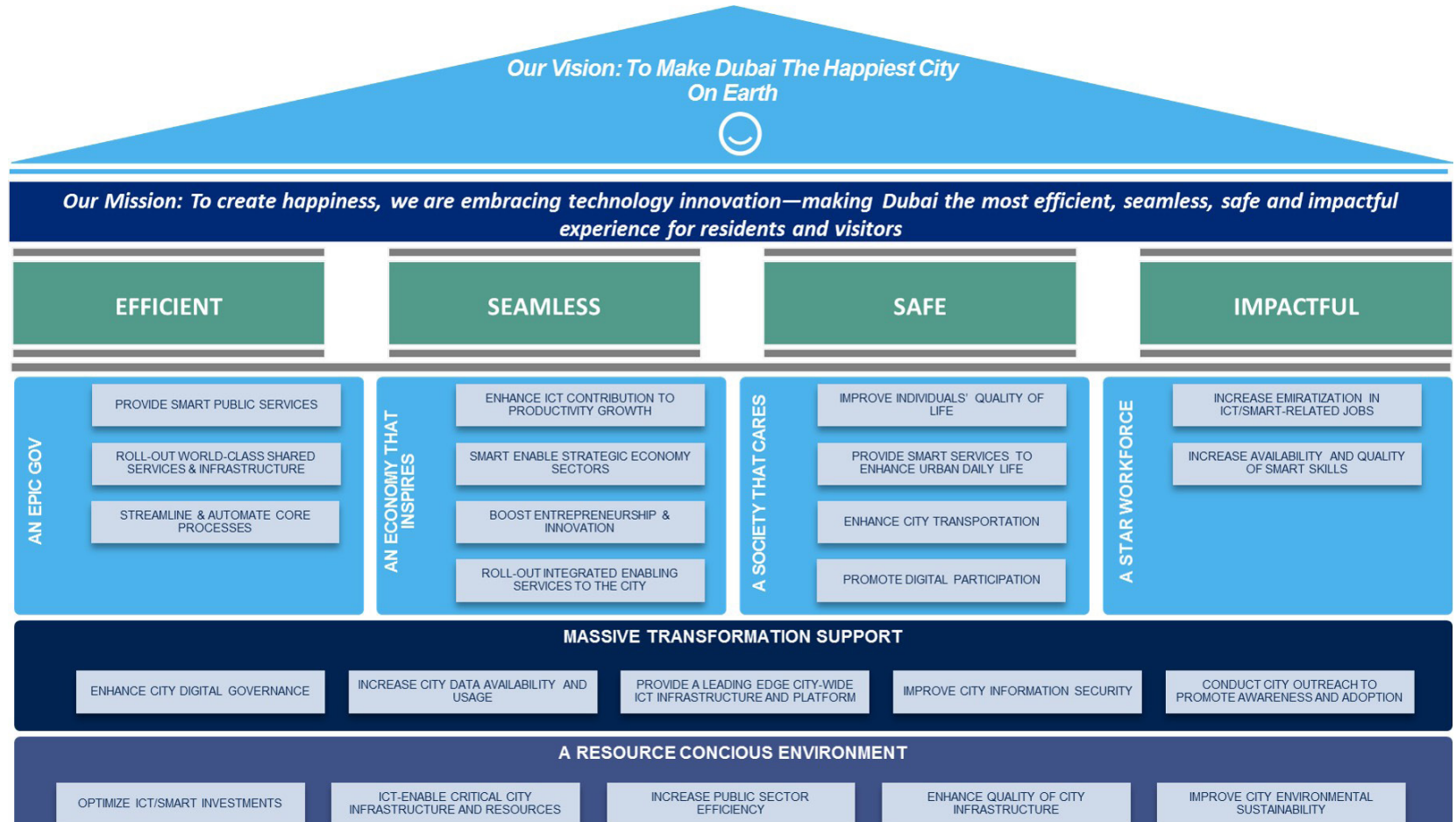
RESOURCE & INFRASTRUCTURE IMPACT
City resources, energy and infrastructure are sustainable and resilient. A clean and healthy environment is maintained

Every strategic initiative, program and project contributing to the citywide transformation is evaluated against these impact axes, so that decision makers can focus time and resources on the most impactful projects.

By 2021, the impact expected to be delivered by the different programs should reach 95% of people happiness across all city services, 16% of carbon emissions reduction (11M tons of CO_2 emissions savings), and tens of billions of UAE Dirhams in total savings.

The path towards the achievement of these very ambitious targets has also been mapped: a Strategy Map describing strategic objectives distributed across the different city perspectives has also been created, translating the whole transformation plan into a simple, easy-to-understand representation of Smart Dubai's priorities and focus areas:

Our Vision: To Make Dubai The Happiest City On Earth

Our Mission: To create happiness, we are embracing technology innovation—making Dubai the most efficient, seamless, safe and impactful experience for residents and visitors

EFFICIENT	SEAMLESS	SAFE	IMPACTFUL
AN EPIC GOV	**AN ECONOMY THAT INSPIRES**	**A SOCIETY THAT CARES**	**A STAR WORKFORCE**
PROVIDE SMART PUBLIC SERVICES	ENHANCE ICT CONTRIBUTION TO PRODUCTIVITY GROWTH	IMPROVE INDIVIDUALS' QUALITY OF LIFE	INCREASE EMIRATIZATION IN ICT/SMART-RELATED JOBS
ROLL-OUT WORLD-CLASS SHARED SERVICES & INFRASTRUCTURE	SMART ENABLE STRATEGIC ECONOMY SECTORS	PROVIDE SMART SERVICES TO ENHANCE URBAN DAILY LIFE	INCREASE AVAILABILITY AND QUALITY OF SMART SKILLS
STREAMLINE & AUTOMATE CORE PROCESSES	BOOST ENTREPRENEURSHIP & INNOVATION	ENHANCE CITY TRANSPORTATION	
	ROLL-OUT INTEGRATED ENABLING SERVICES TO THE CITY	PROMOTE DIGITAL PARTICIPATION	

MASSIVE TRANSFORMATION SUPPORT

ENHANCE CITY DIGITAL GOVERNANCE	INCREASE CITY DATA AVAILABILITY AND USAGE	PROVIDE A LEADING EDGE CITY-WIDE ICT INFRASTRUCTURE AND PLATFORM	IMPROVE CITY INFORMATION SECURITY	CONDUCT CITY OUTREACH TO PROMOTE AWARENESS AND ADOPTION

A RESOURCE CONCIOUS ENVIRONMENT

OPTIMIZE ICT/SMART INVESTMENTS	ICT-ENABLE CRITICAL CITY INFRASTRUCTURE AND RESOURCES	INCREASE PUBLIC SECTOR EFFICIENCY	ENHANCE QUALITY OF CITY INFRASTRUCTURE	IMPROVE CITY ENVIRONMENTAL SUSTAINABILITY

All in all, what differentiates the new strategic focus of Smart Dubai from other similar approaches is the recognition that every single effort should be driven by and focused on the generation of a quantifiable positive impact to the happiness and wellbeing of those who interact with the city.

2. Establishing enablement platforms

One of the fundamental drivers of "smartness" for any transformation towards a digitally enabled urban ecosystem is how data is generated, accessed, managed and shared across its different layers and actors. The formation of innovative collaborative relationships capable of delivering systemic impact requires the establishment of platforms where information can be effectively shared and solutions can be co-created.

In its role as the enabler for Dubai's transformation, the Smart Dubai decided to implement a comprehensive citywide digital platform, namely the Smart Dubai Platform (SDP), to unite all layers of the city's ICT architecture, from connected infrastructure, to data orchestration, to enabling services such as Digital IDs and payments, Internet-of-Things (IoT) and data management, to personal dashboards and applications. This innovative platform represents a shift away from models where city infrastructures are built independently, operating in parallel silos with providers merely supplying point solutions. Instead, this unique platform applies a horizontal and collaborative approach that integrates the city's information technology and services.

The SDP is unique in several ways, principally in the breadth of city solutions that it will empower and in its employment of innovative leading edge technologies. The principle role of the SDP will be as technical enabler for the interconnection of data throughout the city and as technical incubator to new, seamless city-wide services:

DASHBOARD AND ANALYTICS TOOLS	**DIGITAL ID SERVICES (DUBAIID)**	**DIGITAL PAYMENT GATEWAY (DUBAIPAY)**	**PLATFORM AS A SERVICE (PAAS)**
REAL-TIME / IN MEMORY APP ENVIRONMENT	**GEO-LOCATION DATA SUPPORT**	**OPEN & SHARED CITY DATA CATALOGUE**	**IOT MANAGEMENT & DATA AGGREGATION**

Dubai targets the Smart Dubai Platform to be one of the top globally competitive platforms operating in the world. Built through a collaborative and interactive process with all city stakeholders, the Smart Dubai Platform is an embodiment of Smart Dubai's efforts to reshaping the way government services are structured to meet the needs of the customer.

To deliver the SDP, Smart Dubai has pioneered a public-private partnership (PPP) with its Strategic Private Sector Partner, namely du (a major integrated telecommunications services provider in UAE). du contributed their expertise to build a collaboratively designed platform that brings the most advanced technology innovations on the market to support smart city experiences for all Dubai residents, visitors, business owners and city decision makers.

This new and integrated approach depends on interoperability, and from the very outset it became apparent that no single vendor would have the capability to entirely provide such a holistic and technologically sophisticated digital platform. As a result, this demanded not only new budget models, but new thinking from vendors whereby they would not be just service providers but instead 'strategic partners working in harmony with shared vision and goals'.

The adoption of a unique public-private-partnership (PPP) model was therefore the most expedient and efficient alternative of harnessing the potential of the public and private sectors in meeting the goals of this groundbreaking smart city initiative. The risks and the rewards were jointly shared by partners in a well-defined framework agreement.

The key learning from this sort of initiative is quite obvious: city-wide enablement platforms allow the different private and social actors to combine critical experience, skills and resources for the design and implementation of innovative products and services that are unthinkable under an isolated government effort.

Case example: Dubai government electronic shared services platform

Dubai Government is composed of several specialized entities which were independently established through legal mandates, operating autonomously in fulfilling their missions. A whole-of-government approach did not exist in terms of concrete cross-entity electronic shared services (ESS). More specifically, there was no institution established or appointed to carry out ESS activities to a large scale and extent at the government-level. This lack of government-wide electronic shared services compelled government entities to individually invest in various information and communication technology (ICT) solutions and electronic services capabilities resulting in replication of efforts and resources. Furthermore, there were no incentives to share knowledge and practices across the government entities despite potential synergies. Dubai Government faced the challenge of incurring significantly higher financial, human and technology resources needs, which in turn amplified expenditures at the government level due to lack of horizontal collaboration and coordination in early 2000s.

Hence, a comprehensive electronic shared services (ESS) initiative was launched as part of its city-wide digital transformation. An extensive centralized whole-of-government approach was adopted for the common (synergistic) aspects of core and administrative services electronic enablement, referred to as ESS. This centralized whole-of-government approach played a critical role in facilitating and incentivizing Dubai Government entities to collaborate and to cooperate.

Launched initially as part of the Dubai eGovernment initiative, which subsequently evolved into the Smart Dubai initiative in 2014, the ESS forms a key pillar under Dubai's smart city transformation. The overarching strategic goals of ESS initiative were to achieve operational efficiencies and higher returns on ICT investments by providing customer focused shared services while capitalizing on ICT related synergies across the city government entities.

The Smart Dubai ESS initiative implemented and delivered more than 60 shared services utilized by more than 50 entities in Dubai, such as:

- Government Resources Planning (GRP) ESS: extensive range of back-office support functions such as human resources management, financial management, supply chain management, projects management, self-services management, etc. implemented through a centralized ERP system.

- eServices Enabling ESS: platform that enables government entities to host websites; mobile messaging via SMS for core services; electronic and mobile payments; unified digital authentication; electronic information exchange among the government entities; unified repository of all the government entities' services.

- Infrastructure Enabling ESS: includes secure government information network connectivity, secure Internet connectivity, shared email services, shared mobile email, Intranet solutions, and shared collaboration across entities through portals.

- Public and Businesses ESS: includes the one-stop-shop official government portal and mobile app of Dubai Government, recruitment portal, electronic suggestions, electronic complaints and electronic survey systems for public and businesses, and electronic procurement for suppliers.

ICT has been a key enabler of the initiative, with the latest technologies and leading edge solutions deployed as cloud based and/or centralized shared services. Innovation was critical in all aspects of the ESS as government entities' needs and requirements were determined collaboratively and knowledge exchange formed a major part of the implementation.

As of today, ESS have been very successful by achieving operational efficiencies in the form of cost savings of 4.3bn UAE Dirhams (1.2 billion USD) between the years 2003 and 2015. They have also received 84.3% happiness rating by the users of ESS. This initiative played a critical role on contributing to make the UAE rank as Number 1 in the world by WEF in The Global IT Report 2016 for ICT use & government efficiency.
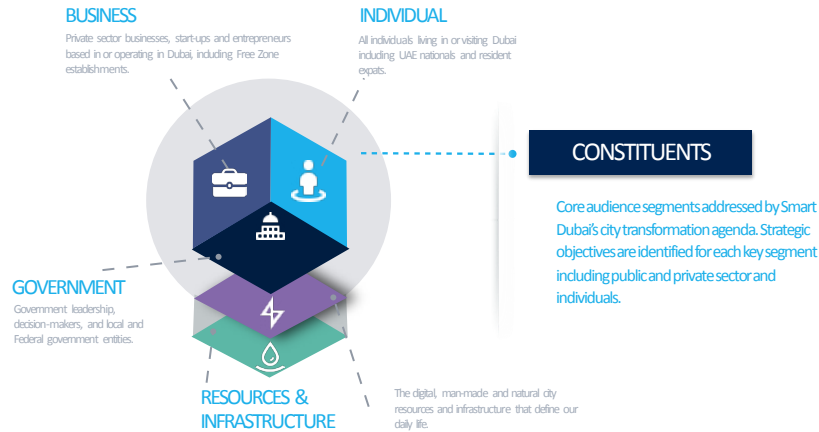
3. Encouraging the formation of coalitions

Another key component of Dubai's successful transformation lies on the effort dedicated, since the inception of the Smart Dubai initiative, on building coalitions of with multiple stakeholders in the city to co-create new products, services and solutions to the city challenges. Smart Dubai was initially established with eleven strategic partners, with important representatives from the private sector invited to participate since the beginning. The message was very clear: the government alone could not embark on such an ambitious endeavor. Hence, the underlying philosophy of the strategic plan was based on three key concepts: communication, integration and cooperation.

The smart city would only come to life if the collaboration between the public and private sectors to achieve the targets in each of the different dimensions of the plan was properly structured, governed and executed. Consensus on business cases and business models (cost benefit analysis, etc.), risk allocation and transparency on fiscal issues ended up being quite critical, and set the scene for successful implementations. Structured co-creation approaches haves also proven to be a very successful way of developing new products, services, value chains and clusters.

The initial eleven founding partners rapidly increased to twenty-four strategic partners spanning sectors including health, economy, energy, transport, water & electricity, environment public and social services, and tourism. The intensive work with these organizations allowed the program to undertake over 130 initiatives and more than 1100 services in a period of less than 3 years. Some of the initiatives included:

- **Dubai Blockchain:** a partnership to transform the Dubai government into the first blockchain powered government, driving the future economy. Aims to increase efficiency by ensuring all government transactions are on blockchain by 2020; support creation of 1000 new business; and increase international leadership by having 27 countries participating in global travel.

- **Salama:** Open and shared medical data for doctors and patients, in partnership with the Dubai Health Authority.

- **Shams Dubai:** Initiative to encourage electricity customers (household, business, and entities) to generate their own green energy, by installing solar photovoltaic panels and connecting them to DEWA's power distribution network. Any surplus not used on site can be exported to the grid, and offset from the customer consumption under a net metering scheme.

- **Integrated Emergency Management and Response Center:** developed in partnership with Dubai Police, the Integrated Emergency Management System (IEMS) is a framework for effective emergency management that integrates partnerships on local, state, and federal level, including the collaboration of government agencies, private sector, and media.

As for the new strategic plan, another layer of innovation has been added to allow key stakeholders to be properly identified and the efforts between them effectively coordinated: Smart Dubai devised a co-creation framework where the interactions between the 4 major types of constituents involved in the city transformation agenda (the government, the businesses, the individuals and resources & infrastructure) are mapped, allowing the definition of specific outcomes for each group as both a contributor to and a benefactor of the impact expected to be generated by 2021:

BUSINESS
Private sector businesses, start-ups and entrepreneurs based in or operating in Dubai, including Free Zone establishments.

INDIVIDUAL
All individuals living in or visiting Dubai including UAE nationals and resident expats.

CONSTITUENTS

Core audience segments addressed by Smart Dubai's city transformation agenda. Strategic objectives are identified for each key segment including public and private sector and individuals.

GOVERNMENT
Government leadership, decision-makers, and local and Federal government entities.

RESOURCES & INFRASTRUCTURE
The digital, man-made and natural city resources and infrastructure that define our daily life.

By doing so, a clear set of expectations (strategic objectives) are formulated for each constituent so efforts can be driven to priorities in a more effective manner: Government constituents are expected to transform impact in data, core, back-office and public services; the business community will transform city service efficiency and labour productivity, boost entrepreneurship and innovation; while residents and visitors (individuals) will benefit from resources and services and contribute with valuable insights to the different components of the plan.

"Innovation does not happen in a vacuum – we must work together to improve city experiences for all."

Her Excellency Dr. Aisha Bin Bishr
Director general, smart dubai office

The emphasis on the establishment and effective governance of multi-actor coalitions to deliver the city transformation highlights the visionary mind-set of Dubai's leadership: the recognition that governments will only be capable of delivering systemic and enduring positive impact if they partner with non-governmental players as major stakeholders.

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Case example: Dubai Blockchain

Over the last 40 years, Dubai has transformed itself into a regional business and tourism hub, with an international reputation as an economic and investment center that attracts thousands of international companies to establish their regional headquarters in the Emirate's many free zones. The Emirate has been able to achieve this success by diversifying its gross domestic product through vast developments in sectors such as tourism, real estate, retail, travel and logistics.

This fast pace of growth, especially for the business, construction and tourism sectors, saw the Government needing improved controls over activities such as permissions and transaction verification and tracking. Simple processes were getting ever more complicated with the addition of activities that were now in demand by the city's new businesses and residents. An agile solution to streamline this growing complexity was needed.

Dubai saw in blockchain the perfect solution: a technology that utilizes open distributed databases of transactions involving value. Its coding method allows for secure record keeping in distributed online ledgers where members share and confirm information with no central authority.

The potential impact of this technology on city services, eliminating the need for trusted third parties in government transactions - coupled with a worldwide blockchain adoption trend that saw $1.1 billion invested by the private sector in blockchain technology in 2016 alone – led Dubai to launch a city wide blockchain strategy with the objective of becoming the first blockchain powered city by 2020. The blockchain strategy is based on three pillars:

The Government also decided to establish a multi-actor coalition formed by public and private sector partners in order to create the

GOVERNMENT EFFICIENCY

100% OF APPLICABLE SERVICES

IMPLEMENT BLOCKCHAIN TECHNOLOGY IN 100% OF APPLICABLE GOVERNMENT SERVICES

INDUSTRY CREATION

BUSINESS OPPORTUNITIES

SUPPORT THE CREATION OF A BLOCKCHAIN INDUSTRY THROUGH EMPOWERING STARTUPS AND BUSINESSES

THOUGHT LEADERSHIP

REGIONAL AND INT'L LEADERSHIP

LEAD THE GLOBAL THINKING OF BLOCKCHAIN TECHNOLOGY AND BECOME THE HUB FOR CROSS COUNTRY KNOWLEDGE SHARING

enabling ecosystem for the new strategy to be properly executed.

The piloting of blockchain will be done across the city in several sectors such as energy, transport and logistics, tourism, health, education and employment, economic development, safety and justice, social services, municipal and land works and smart districts. The Smart Dubai Office will provide each entity with technical standards and unified protocols, as well as centralized support and leadership in selecting the best potential pilots and technical partners to implement them. By opening the door to blockchain partners from around the world to come to Dubai and pilot use cases in each entity, Dubai is stimulating the blockchain market and its own economy.

Regarding the involvement of the private sector, the first Global Blockchain Council was set up to enable a thriving blockchain ecosystem, comprised of 46 members. A Local Private Sector Working Group will also be set up to engage closely with the Government on enabling the potential of blockchain locally.

In brief, the city is creating demand for both the government and private businesses to thrive through the establishment of cross-sector partnerships driven by a common goal: transform Dubai into the first blockchain powered city in the world.

4. Coordinating execution at scale

The development and implementation of a city-wide transformation plan encompassing hundreds of projects to be delivered jointly with a multitude of partners is not a trivial undertaking. Such a massive effort must be supported by a robust organizational set-up capable of coordinating and facilitating the proper execution of initiatives, tracking progress against set targets and fine-tuning assumptions and expectations based on the changes in the environment and the actual impact that is being delivered.

With the first strategic plan in place back in March 2014, the "Smart Dubai Executive Committee" was formed to carry out the implementation phase, with membership of additional entities in Dubai that were seen as core stakeholders. The "Smart Dubai Task Force" was then set under the leadership of Dr. Aisha Bin Bishr, Assistant Director General of the Executive Office at the time, tasked with ensuring that all related government entities and initiatives were aligned with the city's vision.

In a short period of time, the small Task Force was able to conduct several activities that helped set the stage for all the work that lied ahead: current state and gap assessment of the city, international benchmarking of Smart Cities and development of measurement indicators based on objective international standards to track the smart city progress.

By the end of 2015, a new set of legislations was issued to strengthen and formalize the legal framework of Dubai's Smart City initiative. The Smart Dubai Office was formally established as the umbrella organization leading Dubai's digital transformation along with two supporting establishments; namely Dubai Data Establishment and Smart Dubai Government reporting to The Smart Dubai Office. More recently when Smart Dubai Office formulated its 2017-2021 strategy explicitly emphasizing impact, it established Office of Smart City Impact Management (OSCIM) with the monumental task of overseeing the implementation of all projects and initiatives with partners and the broader society, while ensuring progress reporting on all key performance and also impact indicators at the city level.

To execute Dubai's impact driven smart city transformation strategy, OSCIM has developed a city-wide strategic agenda for Government entities and the private sector to understand the top level guidelines to implement the smart city strategy. It provides a holistic view of the strategy, well-defined transformational KPIs and their targets, as well as standards and systems required to implement the smart city strategy.

The strategic agenda is an umbrella document including all the strategic action items that are organized around two main components:

- **Smart Dubai dimensions**: These include various specific action items regarding Economy, Governance, Environment, Living, Mobility and People

- **Cross cutting initiatives**: These include Happiness Agenda and Smart Transformation Support action items. They support and reinforce above mentioned Smart Dubai dimensions through targeted policies, ICT support, targeted marketing, etc.
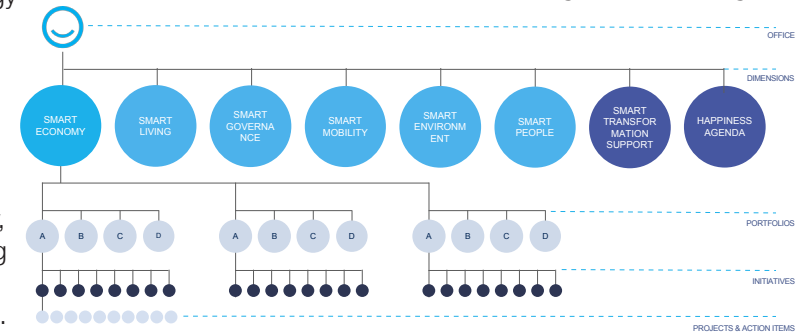
The "Happiness Agenda" was created to fuel city transformation, with a globally unique, scientific approach to measuring & impacting people's happiness.

The Office of Smart City Impact Management (OSCIM) has been able to establish a full-fledged set of strategic capabilities to oversee and monitor the execution of smart city strategy which is a large scale, system-wide, multi-actor transformational effort to make Dubai the happiest city on earth.

5. Measuring and evaluating impact

A key difference between organizations that will strive within an impact economy environment and their predecessors is the timeline on which they measure the creation of value. Today's financial markets foster environments in which the short-term financial performance of an organization takes on greater importance, often forcing long term concerns, financial or otherwise, to take a backseat. The outcome of this reality is that organizations frequently face intense pressure to make decisions that favor short term results without due consideration of the long-term consequences. Business executives will always care about their quarterly numbers, but impact economy leaders also ask whether they will steadily increase shareholder value over the next several years.

The importance of designing an over-arching measurement system that shows real impact for all actors was present since the early days of the Smart Dubai initiative. Evaluation and reporting on long-term social, environmental and economic impact play a central role for the execution of the Dubai Smart City strategy. With this in mind, Dubai initially established an assessment framework based on the Smart Sustainable Cities (SSC) KPIs contained in the recommendations from the International Telecommunication Union - ITU (United Nations specialized agency for information and communication technologies) to evaluate the implementation of their smart city initiatives. The process of KPI collection in Dubai was facilitated by Smart Dubai and consisted of the following activities:

- **Coordination and gathering of data by different entities:** Smart Dubai coordinated the data collection process, organized the analysis of the scope and applicability of KPIs with each of the collaborating entities, and delivered the formal request for collecting the data from them.

- **Assessment, evaluation and verification of the KPI data collected:** a detailed analysis of the KPIs and data collection process was conducted. The applicability of KPIs to the city was determined through interactive interviews and visits to various Dubai entities, which own the data and manage the different aspects evaluated.

During the assessment process, each entity assisted with KPI analysis. This provided an understanding of the scope of each KPI in the city and its contribution to achieving the City's Vision. Part of this analysis also included assessing the relevance of the KPIs as a measurement tool for Dubai, which could help to improve the smart city initiatives and the overall project Performance. Dubai was globally the first pilot city to measure and apply the Smart Sustainable Cities KPIs as formulated by ITU.

Following this process, a list of indicators has been defined in the following dimensions by ITU:

I.   Information and communication technologies

II.   Environmental sustainability

III.   Productivity

IV.   Equity & Social inclusion

V.   Quality of life

VI.   Physical Infrastructure

All KPIs agreed with stakeholders across these 6 dimensions have defined short and long term targets, with on-going reporting of actual performance according to the defined governance structure. Moreover, initiatives have been identified to address the performance gap. Since the strategic agenda is focused on impact, all initiatives are evaluated according to the three areas of impact previously described: Customer Impact, Financial Impact and Resource & Infrastructure Impact.

In order to attain the Smart Dubai vision, Dubai's partners develop projects in their areas of expertise and define outcomes aligned with Smart Dubai objectives. Smart Dubai has defined a group of transformational KPIs and initiatives to assess the performance and impact of the different initiatives implemented across the Emirate. These initiatives include:

- **The Happiness Meter:** one of Dubai's first strategic "smart city" initiatives. It aims to collect citizens' experience and feedback, through a centralised data dashboard.

- **The Dubai Data initiative:** led by the Dubai Data Establishment and decreed by the Dubai Data Law of 2015, is the most comprehensive citywide data initiative guiding the opening and sharing of city data across the public and private sector.

- **Smart Dubai Index:** an impact assessment tool to be developed by Dubai to measure how initiatives and services in Dubai contribute to the vision of Smart Dubai, based on ITU's KPIs for SSC. It also incorporates additional KPIs pertinent to Dubai's smart city strategy.

In summary, organizations, public or private, that make conscious, data-driven decisions to create positive impacts for their customers, their employees, their suppliers, and their communities are setting themselves up for sustainable economic prosperity and urban living. Forward-looking organizations such as Smart Dubai have already begun to make headway, and it is only a matter of time before more follow.

Closing Remarks

In the impact economy, organizations will have to master the art of fully leveraging partnerships between public and private sectors and civil society to optimize their outcomes. All must be engaged in the creation of shared value. The active search for win-win solutions by exploring areas of overlapping interest with a broader range of stakeholders will enable governments and private sector players to maximize the impact delivered to customers and communities.

Driven by the visionary leadership of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and The Ruler of Dubai, Dubai has been consistently proving to the world that the boundaries between what's possible or impossible can be constantly redefined when alignment of efforts towards a shared ambition are properly mobilized, empowered and enabled. The Smart Dubai experience can serve as a real-life example for those who want to embark on a similar journey of systemic positive impact creation fueled by technology innovations and catalyzed through multi-actor coalitions.

> "Cities are not measured by swipes or clicks, but by people's happiness. We measure impact by the smart services and initiatives available from our partners, improving experiences for all."
>
> Dubai Smart City approach

Furthermore, some key learnings can be drawn from the Smart Dubai case and serve as a blueprint for other transformational programs:

- **Clear Long Term Vision:** defining a long term vision that has strong support from the leadership at the city level and effectively communicating to partners allowed alignment in execution of initiatives with social and economic value.

- **Leadership:** committed leadership from all stakeholders in multi-actor partnerships is fundamental to drive the execution of initiatives.

- **Defined partnership model:** well-thought and innovative options for partnership models that examine the different alternatives available and select the most feasible one to ensure implementation success.

- **Governance:** putting in place a governance structure with clarified accountabilities and capacity of monitoring progress in implementation of initiatives.

- **Supporting Policies:** when introducing transformative initiatives at city level, Smart Dubai realized that supporting policies, regulations and legal frameworks are essential to prevent any roadblocks that may otherwise exist. This has helped define the overarching guidelines through which partners delivering transformative initiatives can successfully function.

- **Transformation support:** ensuring that the enabling tools to support the transformation exist at a multi-actor level. In the case of Smart Dubai, this included ICT infrastructure, data safety & security and well-defined processes, city experience optimization support, etc. describing clear roles, responsibilities and enablement mechanisms.

- **Innovative Financing:** Creating a business model defining risk and rewards, costs and jointly deciding investment schemes.

- **Defined operating model:** Defining the key processes that will ensure the successful operation and functioning of coalitions and partnerships.

By leveraging the latest in technology innovations and structured approaches for the creation of coalitions aimed at impacting people's happiness and wellbeing, Smart Dubai was able to combine two powerful transformation forces towards making Dubai the happiest city on earth.

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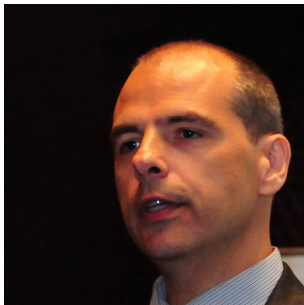
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References.

GERAY, O. & KARAM, M. 2017. Smart Dubai Platform: A Public Private Partnership Case.

KAISSI, Z. 2017. Dubai – The First City on the Blockchain.

GERAY, O. 2017. Dubai Government Electronic Shared Services.

DEMAITHAN, H. & GERAY, O. 2017. Dubai Data Initiative: Governance, Policy & Engagement.

MOHAMMED BIN RASHID SCHOOL OF GOVERNMENT 2016. A Smart City for Public Value: Digital transformation through agile governance – The case of Smart Dubai.

THE GUARDIAN 2017. From Manchester to Barcelona: Europe's smartest cities put citizens first.

PALLADIUM 2016. The Birth of the Impact Economy.

EMIRATES NEWS AGENCY. 2015a. Dubai first city to trial ITU key performance indicators for smart cities. WAM, 13 May 2015.

GIL-GARCIA, J. R., PARDO, T. A. & NAM, T. 2015. What makes a city smart? Identifying core components and proposing an integrative and comprehensive conceptualization. Information Polity, 20, 61-87.

SMART DUBAI OFFICE, 2017. City transformation agenda 2021.

UNDESA 2014. UN E-Government Survey 2014: E-Government for the Future We Want. New York: United Nations Department of Economic and Social Affairs.

ITU 2014a. Overview of key performance indicators in smart sustainable cities. ITU-T Focus Group on Smart Sustainable Cities, Telecommunication Standardization Sector of the International Telecommunication Union.

ITU 2014b. Smart Sustainable Cities: An Analysis of Definitions. ITU-T Focus Group on Smart Sustainable Cities, Telecommunication Standardization Sector of the International Telecommunication Union.

ITU 2015. Measuring the Information Society Report 2015. Geneva: International Telecommunication Union.

WEF 2014. The Global Competitiveness Report 2014-2015. In: SCHWAB, K. & SALA-IMARTIN, X. (eds.). Geneva: World Economic Forum.

WEF 2015a. The Global Competitiveness Report 2015-2016. Geneva: World Economic Forum.

WEF 2015b. The Global Information Technology Report 2015: ICTs for Inclusive Growth. In: DUTTA, S., GEIGER, T. & LANVIN, B. (eds.). Geneva: World Economic Forum.

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