

# Smart Dubai Happiness Meter in Dubai, United Arab Emirates

*Case study of the U4SSC City Science Application Framework*



**11 SUSTAINABLE CITIES  
AND COMMUNITIES**



# Case study: Smart Dubai Happiness Meter

Dubai, UAE

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## Foreword

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The opinions expressed in this publication are those of the authors and do not necessarily represent the views of their respective organizations or members.

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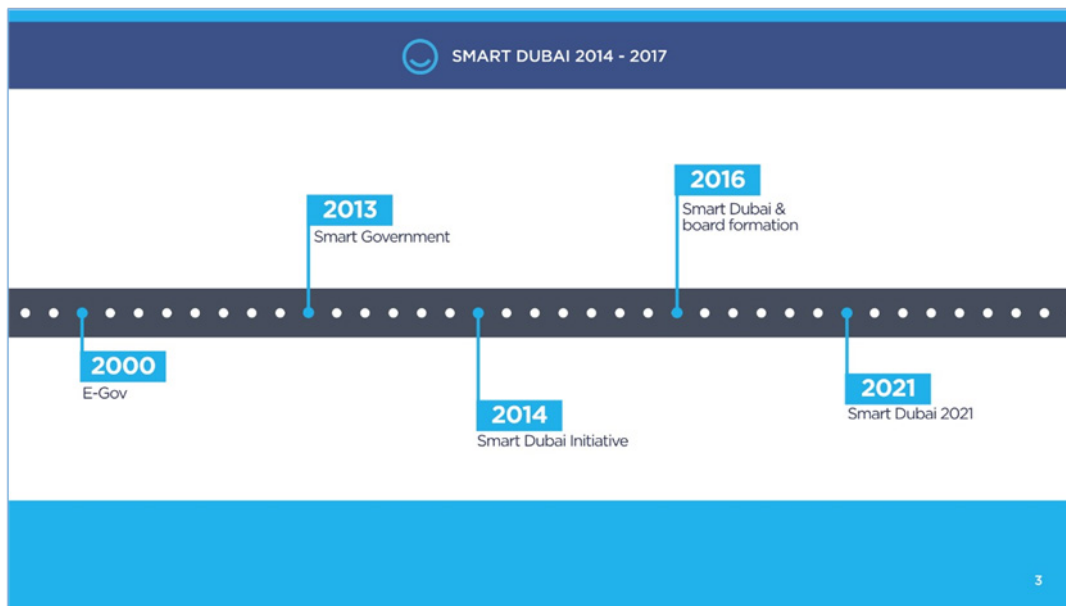
## 1. Introduction

### 1.1. Background

Dubai is one of the seven Emirates in United Arab Emirates (UAE) and a highly vibrant city with a population of over 3 million people in the Arabic Gulf region. Dubai has set itself on an ambitious course through a rapid and successful transformation in both economic and social sectors. Over the span of last 40 years, Dubai has witnessed a major transformation to become one of the most visited global cities and home to the world’s busiest airport; the 9th largest port in the world; and the world’s tallest building.

Dubai has established itself as a robust economy maintaining significant economic growth over the years. It acts as the leading economic hub in the region with successful economic diversification. Sectors such as trade and logistics, tourism, financial services, retail, and real estate have played critical roles in Dubai’s economic achievements and they are complemented by a highly modern city infrastructure. Dubai is currently in its third generation of digital transformation and the city already drove public acceptance and adoption of ICTs in all aspects of life.

**Figure 1: Digital Transformation Journey of Dubai**



In this context, Smart Dubai initiative was born in 2014 out of the visionary approach of His Highness Sheikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and The Ruler of Dubai to **focus the city’s unified efforts towards its most valued asset - its people.**

**The vision of Smart Dubai is to become the happiest city on earth.** In line with its vision, the Smart Dubai initiative has structured its strategic approach to embrace the latest technology innovation that will make the city experiences seamless, safe, personalized and efficient, delivering enhanced quality of life and business experiences to contribute in making Dubai the happiest city

on earth. The Smart Dubai initiative plays a key role in guiding and enabling the city’s ongoing digital transformation across all sectors.

## 1.2. Challenge and response

The ambitious vision of making Dubai the happiest city on earth has mobilized Dubai entities, both public and private sector, to undertake strategic initiatives under the leadership of Smart Dubai Office. Happiness is not just a slogan in Dubai but it is at the core of its smart transformation (UAE is the only country in the world with a Ministry of State for Happiness).

Achieving happiness is neither simple nor a straightforward task. On the contrary, it is quite challenging to translate it into a city-wide policy with concrete goals, action items, incentives, and indicators.

Smart Dubai launched the Happiness Agenda to fuel its city transformation to happiness. Smart Dubai has adopted a globally unique, science-based and methodical approach to measure, impact, and sustain happiness for the whole city.

**Figure 2: Smart Dubai Happiness Agenda**



One of the challenges was to collect timely (in fact on the spot) feedback from the users of city services to measure their happiness regarding city services experience. Hence, Smart Dubai launched a simple tool called Happiness Meter to measure city experiences happiness.



## 2. The smart project(s)

### 2.1. Vision and content

The Happiness Agenda measures and impacts people's happiness through an iterative framework to discover, change, educate and measure people's happiness as shown in Figure 2. The Happiness Agenda benefits from access to innovative technology and a broad partnership network for a unified approach utilising the best tools at Smart Dubai's disposal.

**Shared Understanding:** Today, city leaders and decision makers act from an informal knowledge base with assumptions about what factors influence happiness in a city. Smart Dubai decided to build a unified definition of happiness, beginning with a scientifically aligned cultural baseline and understanding of basic and higher needs in Dubai. This formally defined, shared understanding became a guide for strategic activities in Dubai to prioritise happiness.

Without a shared understanding of happiness factors in the city today, neither the private nor the public sector are able to fully consider the impact on happiness from city planning and customer experiences. Building on a culturally relevant scientific model, Smart Dubai aimed to define and promote new policies and approaches to focus the city and its people on happiness.

**Needs Fulfillment:** The Happiness Agenda aims to address the needs of people that are essential to enhancing happiness for both the short and long term. The Happiness Agenda discovers these needs, creates changes that support them, creates awareness so that others can support them proactively, and innovates towards 'happiness' by satisfying individuals' affective, emotional, basic, cognitive and deeper eudaemonic needs.

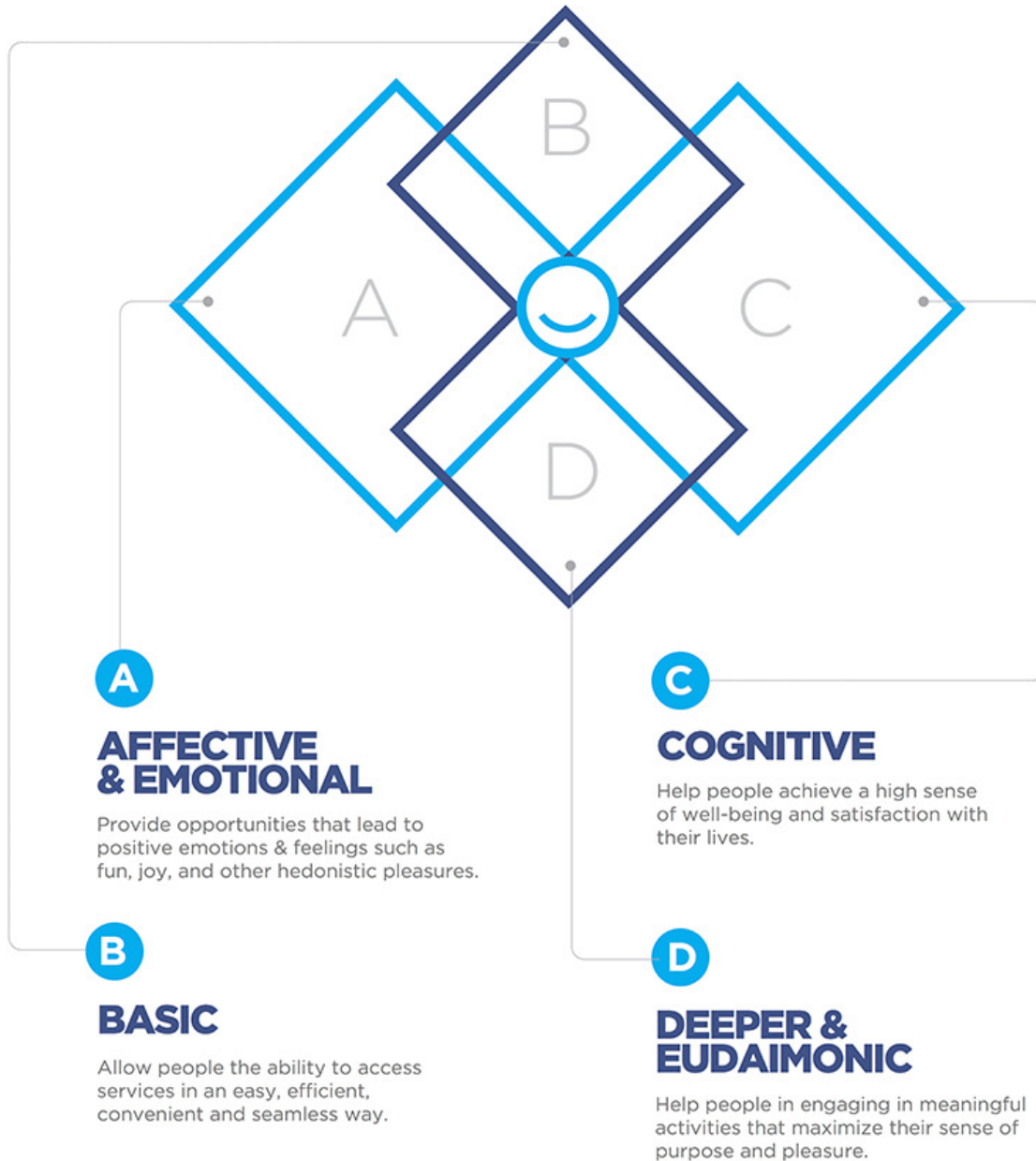
The Happiness Agenda as indicated in Figure 2 has four strategic portfolios; namely Discover, Change, Educate, and Measure.

**Discover:** A primary portfolio in the Happiness Agenda is the 'Discover' portfolio, which is geared towards ensuring clear and shared understanding amongst stakeholders. The essence of this portfolio is to discover rather than assume facts and concepts that lie at the heart of subsequent activities. This will result in enhancing the efficiency and chances of success of these activities.

**Change:** This is the portfolio that is primarily responsible for creating change in Dubai with regards to Happiness. This change will be made by having a clear strategy towards HX (Happiness Experience), as well as producing policies and associated awards that encourage activities and services that enhance happiness. The portfolio also contains programs aimed at delivering customer interventions as well as city transformations that improve the quality of life in Dubai.

**Educate:** An important part of increasing happiness in Dubai is to create awareness, train and educate customers and organization with regards to happiness activities and its culture. This is done by disseminating relevant content and delivering events that promote such understanding. Such activities are undertaken with partners in various sectors, as well as positioning Dubai as an international thought leader in the science and practice of happiness.

Figure 3: ABCD of Needs



**Measure:** In order to ensure efficient and efficacious delivery of programs within the Happiness Agenda, it is important to sustain ongoing measurements of key aspects of happiness and customer needs in private and public sectors. Smart Dubai conducts regular assessments of happiness in Dubai, as well as assessing the effectiveness of the framework within the agenda itself.

*This case study particularly focuses on the Measure strategic portfolio and more specifically analyzes the Happiness Meter as one of the measurement tools adopted by Smart Dubai at the city level.*

## 2.2. Implementation

**Happiness and City Experiences:** Smart Dubai’s happiness vision has rallied the entire city administration to fundamentally redesign and enhance its various city experiences while utilizing emerging technologies (and to a limited extent leading edge other technologies as well).

All principal city dimensions are covered in targeted city experiences redesign including mobility, energy, environment, economy, society, education, health and public services. Smart Dubai selected high impact use cases to touch the daily lives of people (e.g. commuting in the city, charging EVs, renting or buying a property, availing prescriptions for health, food safety, enrolling in schools, entrepreneurs acquiring assistance in starting their own businesses from an AI-based agent and applying for commercial licenses through blockchain based registries etc.). Initially more than 20 blockchain and more than 30 AI use cases and additionally 100 customer journeys were identified and redesigned in the first stage for implementation pertaining to city experiences in Dubai.

Hence, several initiatives were implemented in the Discover, Change and Educate portfolios of the Happiness Agenda.

**Happiness Meter for City Experiences:** As part of its **Measure** portfolio in the Happiness Agenda, Smart Dubai has implemented a simple yet very powerful tool, called the **Happiness Meter** to measure city experiences’ happiness across thousands of touch points (linking it to its vision of becoming the happiest city on earth).

It is a simple happiness measurement tool which collects data from various points in the city instantly to reflect city residents’ and visitors’ experiences in Dubai. It is a plain tool with three options to choose from (represented in terms of faces as shown in Figure 4): happy, neutral and unhappy.

**Figure 4: Illustration of Happiness Meter**



**City-Wide Implementation of the Happiness Meter:** Smart Dubai has implemented Happiness Meter in a phased-manner spanning both public sector and also selected private sector entities. It allowed Smart Dubai to unify its city experiences' Happiness Measurement through a simple tool. The implementation followed the below general approach:

- It was initiated in a handful of government entities as a pilot and included digital channels only,
- It was gradually rolled out to more than 50 government entities in a year mostly encompassing their digital channels (websites, mobile apps, kiosks, etc.),
- The roll-out was then extended to include physical channels of government entities including their customer service centres (i.e. counter-based face-to-face services),
- The Happiness Meter design was tested with heavy involvement of users and the tool was intentionally made exceptionally simple and easy to use as confirmed during extensive user experience testing,
- The rapid success and uptake enabled Smart Dubai to extend it to several private sector entities at the city level and their customer service delivery channels in addition to a comprehensive coverage in the public sector entities,
- The initial version of the Happiness Meter entailed selecting one of the three happiness choices (happy, neutral and unhappy). The subsequent version included asking for a very brief feedback as to what makes the users of happiness meter give the ratings they opt for. This allows service providers to gather short, yet insightful feedback from their customers and allows targeted improvements in their service delivery.

**Data collected through Happiness Meter and Analyses:** Smart Dubai collects the following data through the Happiness Meter:

- Happiness score (one of the three options; happy, neutral, and unhappy),
- The entity for which happiness score was given
- The channel for which happiness score was collected (e.g. Web, Mobile app, Service Center and Counter, etc.),
- The time of the transaction
- Optionally, customers can provide any general comments or feedback from the users about the service (what makes them happy, what aspects can be improved, etc.),
- Optionally, customers can separately rate and provide feedback on the following attributes (relevant ones are presented to the user depending on channel type; e.g. center appearance applies only to customer service centers):

- Ease of Use
- Ease of Access
- Speed of Delivery
- Clarity of Presentation
- Technical Performance
- Customer Privacy
- Staff Professionalism
- Center Appearance
- Online Support
- Website Application Design
- The service for which happiness score was given
- Geolocation (based on channel)

The collected data enables Smart Dubai to analyze the following, among several others:

- City level happiness score
- Entity level and entity type consolidated (e.g. public or private sector) happiness score
- Channel level happiness score
- Number of votes at city, entity and channel levels
- Distribution of votes by the time of the day
- Reasons for happy votes based on comments from customers (allows dissemination of good practices among the entities)
- Reasons for unhappiness based on comments from customers (allows services enhancement)
- Various statistical analyses to understand distributional aspects (variations and statistical modeling)
- Various correlation analyses (machine learning) to link happiness to service related attributes



## 2.3. Results

**Happiness Meter Actual Results:** Since its launch in 2015 until the end of 2018, more than 22.5 million votes have been collected from the customers of various city services in Dubai.

- The overall happiness rating has reached 90% at the city level in 2018.
- The Happiness Meter is rolled-out to 172 entities, both public and private, by the end of 2018. Out of these 192 entities, 53 are public sector and 119 are private sector entities.
- The Happiness Meter has been rolled out to more than 4400 customer touch points in 192 entities.
- More than 4400 customer touch points include digital channels of various entities such as mobile apps, websites, kiosks; and also physical face-to-face channels such as customer service centers and their individual counters (this allows tracking results all the way cascaded down to individual counters).
- More than 650,000 comments have been received from the users of Happiness Meter which provide input on what makes users happy for various services as well as feedback for services enhancement.
- Happiness Meter provides the city leadership with real-time access to happiness results as part of its implementation plan creating transparency and an immediate feedback tool to city administrators for enhancing city experiences. The results are accessible to the city leadership through a website as well as a mobile app and gives them to chance to see cumulative and also

**Figure 5: Consolidated Happiness Meter Results 2015 – 2018**



real-time instantaneous results, and also perform analyses such as reporting results by entity, channel, customer touch point, location, etc.

**Happiness Meter Impacts and Benefits:** Despite its simplicity, Happiness Meter has been a very useful policy tool for collecting happiness data in a timely, and extensive manner with a wide coverage of touch points at the city level.

### Social Impact:

- **Direct linkage to Smart Dubai vision:** Happiness Meter has played an instrumental role in gauging happiness of city experiences linking directly to Smart Dubai's vision of becoming the happiest city on earth. Smart Dubai uses other complementary measurement tools to assess happiness (e.g. surveys, social media sentiment analyses, etc.), however Happiness Meter has provided instant feedback as opposed to delayed mechanisms that measure happiness with a certain time lag.
- **Engaging Public:** Happiness Meter has been a simple tool to engage people to gauge their city experiences satisfaction across several touchpoints. It plays the role of a simple participation tool for people and allows them to provide instant feedback and if they want they can also provide detailed feedback for the reasons of their selections.
- **Improvement in Social Services:** Happiness Meter has been incorporated in several social services (in addition to others in the city) and allows direct feedback on them, which in turn enables targeted enhancements and improvements in social services delivery.

### Economic Impact:

- **Focus on core business:** Since Smart Dubai has taken the responsibility of designing, implementing and operating Happiness Meter, Dubai government entities were relieved to implement the same on their own and focus on their core businesses and enhance customer experiences during their services delivery. Happiness Meter also enabled a uniform way of measuring city experiences' happiness (as opposed to each and every entity formulating its own approach which would complicate aggregation of results).
- **Cost savings through operational efficiencies:** Happiness Meter has been implemented as a circular (shared) service capitalizing on the synergies that exist among the city entities that utilize it. This has allowed significant cost savings; since in the absence of such a shared solution, each and every entity would invest on its own to implement it. It would also pose challenges in terms of collecting and aggregating data from several entities. Smart Dubai designed Happiness Meter flexible and scalable enough to accommodate future expansion in terms of economies of scale (adding new entities) and also in terms of economies of scope (implementing enhancements).
- **Improvement in Economic Services:** Happiness Meter has been incorporated in several economic services (in addition to others in the city) and allows direct feedback on them, which in turn enables targeted enhancements and improvements in economic services delivery. Several public sector entities providing economy related services such as business licensing,

trade facilitation, ports management, free zones services, etc. have all availed it as a customer feedback mechanism.

- **High levels of service delivery:** Happiness Meter provides instant feedback and even in some cases detailed feedback from customers for their happiness ratings. This has allowed government as well as commercial entities to promptly address their service delivery issues perceived by customers. Over time, several entities improved their scores by taking timely action based on customer ratings and feedback.
- **Transparency and Healthy Competition:** Happiness Meter data stored in centralized systems and repositories has enabled advanced analytics and business intelligence for various public and private sector entities responsible for policy making, services delivery and decision support. It also allowed advanced 4IR capabilities to be utilized such as data science, AI, blockchain, etc. due to flexible design. Hence, entities could benchmark themselves with other entities in the city and understand their relative position with respect to services delivery. This also enables a healthy competition among city entities and provides an incentive mechanism to improve their relative rankings and positions with respect to Happiness Meter.
- **Leadership engagement:** The city leadership has access to Happiness Meter results and they are available across various digital channels including website and mobile app. This has allowed monitoring results in cumulative as well as even real time by the various managers and leaders in city entities, giving them the chance to intervene, if need be, for enhancement and improvement of city services delivery.
- **Knowledge sharing for happiness across the public sector:** Smart Dubai has provided concrete platforms for sharing and exchanging ideas across the public sector for services enhancement. Entities shared their experiences and various techniques they used to improve their services among each other openly. An innovation idea belonging to one entity becomes available to all the other entities when shared openly. Collective knowledge capital in terms of enhancing city experiences was enriched at the public sector level.

### Environmental Impact:

- **Enhanced Resilience:** The centralized nature of Happiness Meter implementation as an ICT service and its corresponding infrastructure enabled disaster recovery and resilience aspects to be implemented as part of its overall shared services approach. Smart Dubai circular ICT services and infrastructure (Happiness Meter being one) are resilient by design featuring redundancies, automatic fail-over mechanisms, etc. Hence, it is designed resilient to various natural or man-made disasters, etc.
- **Reduced environmental impact due to consolidation:** Shared implementation approach for Happiness Meter undertaken by Smart Dubai has circumvented the need for other city entities to replicate ICT infrastructures in their own premises. Consequently, Happiness Meter related ICT services and infrastructure have significantly been consolidated due to economies of scale and also scope, resulting in less number of overall ICT equipment (IT assets such as network

equipment, server equipment, etc.). This in turn has also resulted in reduced CO2 emissions due to consolidated ICT equipment. Hence, it is designed as an environment conscious solution and provides benefits in green computing.

### 3. Conclusions

Smart Dubai's vision of "becoming the happiest city on earth" is at the core of its digital transformation. Inherently, this is a vision stated as a goal for the people of Dubai. Hence, measuring people's happiness plays a key role for Smart Dubai to gauge its status with respect to its vision. In this context, Smart Dubai has employed several measurement tools including the Happiness Meter (among others, such as surveys).

Happiness, well-being and quality of life are relatively novel goals for policy making in the digital age. Happiness Meter acts as a bridging tool to integrate people's impressions of actual city experiences with the overall transformation efforts of Smart Dubai. It is a modest yet formidable tool which unifies happiness measurement for city services on the spot.

Smart Dubai strongly believes that the Happiness Meter as a concept and also as an implemented tool is transferable to other cities. Other cities can take into account their own particular contexts and constraints as well as their stakeholders' specific requirements and expectations; however, the highly horizontal and agile nature of Happiness Meter would render it highly applicable in most cases.

The strong positive social, economic and environmental impacts reinforce its compelling case for cities to consider as an easy to use engagement tool for its citizens. Its strong uptake in Dubai with more than 22 million votes in a few years for a city of population over 3 million is a testimony to its potential for widespread engagement. Cities can capture its impacts and benefits through a simple implementation coupled with a wide rollout at the city level as discussed in this case.

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## **B. List of discussion partners/interviews**

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