PERBADANAN PUTRAJAYA

PUTRAJAYA SMART CITY Blueprint



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LIST OF ABBREVIATIONS

AADK	Agensi Antidadah Kebangsaan	MOF	Ministry Of Finance
API	Application programming interface	MOE	Ministry Of Education
APM	Angkatan Pertahanan Awam Malaysia	MOTAC	Ministry of Tourism, Arts and Culture
BASTW	Bahagian Alam Sekitar, Tasik dan Wetland	MKN	Malaysia National Security Council
BIM	Building Integrated Modelling	MRF	Material Recovery Facility
BPH	Bahagian Pengurusan Hartanah	MGTC	Malaysian Green Technology Corporation
BTMK	Bahagian Teknologi Maklumat & Komunikasi	NGO	Non-Government Organisation
BPTKP	Bahagian Perancangan Tanah dan Kelulusan Pelan	NUP	New Urban Policy
CCTV	Closed-circuit television	NGV	Natural Gas for Vehicles
C-RAN	Centralized Radio Access	OKU	Orang Kurang Upaya
DO	Development Order	OSC	One Stop Centre
EPU	Economics Planning Unit	PJH	Putrajaya Holding
EV	Electric vehicle	POINT	Putrajaya Open Innovation Terminal
FGD	Focus Group Discussion	PBAR	Putrajaya Bebas Asap Rokok
GHG	Greenhouse Gas	PAPTT	Pengangkutan Awam Putrajaya Travel & Tour
GPS	Global Positioning System	PCC	Putrajaya Command Centre
IoT	Internet of Things	PDRM	Polis Diraja Malaysia
JKR	Jabatan Kerja Raya	PTGWP	Pejabat Tanah dan Galian Wilayah Persekutuan
JPS	Jabatan Pengairan dan Saliran	PSP	Professional Submitted Person
JKPTG	Jabatan Ketua Pengarah Tanah dan Galian (Persekutuan)	SWCorp	Solid Waste Management and Public Cleansing Corporation
JAS	Jabatan Alam Sekitar	SPAH	Sistem Pengumpulan dan Penggunaan Semula Air Hijan
JPJ	Jabatan Pengangkutan Jalan	SCADA	Supervisory control and data acquisition
JAWI	Jabatan Agama Islam Wilayah Persekutuan	SDGs	Sustainable Development Goals
JKM	Department of Social Welfare Malaysia	SYABAS	Syarikat Bekalan Air Selangor Sdn. Bhd.
KPKT	Ministry of Housing and Local Government	SPAN	Suruhanjaya Perkhidmatan Air Negara
MESTECC	Ministry of Energy, Technology, Science, Climate Change and Environment	SEDA	Sustainable Energy Development Authority Malaysia
KOSPEN	Komuniti Sihat Pembina Negara	DFTZ	Digital Free Trade Zone
KKM	Ministry of Health	TM	Telekom Malaysia
LPRS	Licenses Plate Recognition System	UKAS	Unit Kerjasama Awam Swasta
MOT	Ministry of Transport	JPWP	Jabatan Pendidikan Wilayah Persekutuan
BPM	Bahagian Pembangunan Mampan	KPM	Kementerian Pendidikan Malaysia
BKPPP	Bahagian Komersial, Pembangunan Perniagaan & Perlesenan	MPP	Majlis Perwakilan Penduduk
BKK	Bahagian Komunikasi Korporat	PPAM	Perumahan Penjawat Awam Malaysia
BSIB	Bahagian Senibina dan Inspektorat Bangunan	PJC	Putrajaya Corporation
JPNIN	Jabatan Perpaduan Negara & Integrasi Nasional		

1.0 URBANISATION CHALLENGES AND TRENDS

Urban challenges vary, while many are experiencing unprecedented rates of urbanization and population growth, others are experiencing shrinking populations. The rapid urbanization that has taken place in the last decades has resulted in various urban issues such as congestion, pollution, security and deterioration of natural resources. Many of the associated challenges are omnipresent: people are living longer leading to increased demands on healthcare, the climate is changing resulting in extreme and often-catastrophic weather events and rising sea levels, burning of fossil fuels and improperly treated effluence discharge into surface waters is resulting in large-scale pollution in cities.

Regardless of how city is being affected by these challenges, one thing remains constant, the need to provide core urban infrastructure and deliver city services as efficiently and cost effectively as possible to all city dwellers. To address urban issues such mentioned above, smart city is a new approach in urban management and development to make Malaysia's cities more sustainable and livable. Information Technology applications make smart city more practical and convenient for urban population and city managers.

The Fourth Industrial Revolution offers huge potential to transform and realign our economic and societies. There is an increasing realization that the 4th Industrial Revolution helps address society's environmental and social challenges and the 4th Industrial Revolution is the fastest period of innovation ever. Previous industrial revolutions advanced economic development, but have largely come at the expense of the planet.

According to the findings by Scientist at The Stockholm Environment Institute, have identified that four out the Earth's nine Planetary Boundaries have already been crossed, namely climate, biodiversity, land system changes and biogeochemical cycles. Risks will only heighten as population swells to a projected 9 billion by 2050, increasing food, materials and energy needs. In parallel, society today is under growing social and economic strain, from mounting inequality, youth unemployment, automation, and geopolitical volatility.

These global challenges of today are framed by the United Nations' 17 Global Goals for Sustainable Development (SDGs). The SDGs provide an action agenda for people and planet by 2030. There is a window of opportunity now, to make sweeping advances of the 4th Industrial Revolution help government, business and society to achieve these goals not make them harder to attain.

Today's technology driven revolution have impact on cities transformation and for the government and policy makers, it is vital that the enabling mechanisms are put in place for the 4th Industrial Revolution to be a sustainable revolution. Governments and regulators will need to adapt quickly with the rapidly evolving 4th Industrial Revolution landscape and provide enabling environment, encourage public-private partnership and maximise positive social. It is all a game changing in technologies and solutions for people and the planet.



1.1 WHAT IS SMART CITY?

What is the definition of Smart Cities? Smart Cities are all cities that use ICT and technological advances to address urban issues including to improve quality of life, promote economic growth, develop sustainable and safe environment and also encourage efficient urban management practice. In the global context, smart cities are used as one of the approaches to resolve urbanization issues and improving the quality of life in the city. ICT and digital technologies supporting city management are at the heart of a global market in rapid expansion. According to the study conducted by the Department of Business Innovation and Skills

(BIS) the Global market for smart urban technology supported services is expected to reach an annual USD400 billion in 2020 and it is expected that this include USD220 billion for the smart energy alone.

The Smart City concept directly grew out of the sustainable cities movement and is widely considered to have the potential to transform cities. The term that often been used with such concepts as the ‘’digital city”, ‘’intelligent city”, or ‘’knowledge-based city”. Generally the common understanding of a smart city is a city monitored through information and communication technology (ICT) and digital technologies.

The concept of Smart City also described with the idea being that enhanced real-time data, automated utility systems and digital communication tools will increase the cost-effective provision of urban services and governance.

Across Malaysia an internationally, cities are increasingly recognising the role of innovation and technology in enhancing all areas of urban life. Appropriate integration of technology is quickly becoming a defining feature that sets cities apart in terms of economic advantage and competitiveness.

The fifth edition of the index analyses the level of development of 165 cities from 80 countries, across nine dimensions considered key to being a smart, sustainable city, human capital (developing, attracting and nurturing talent), social cohesion (consensus among the different social groups in a city), economy, environment, governance, urban planning, international outreach, technology, and mobility and transportation - ease of movement and access to public services . Most of the top ranking Global Smart Cities have positioned themselves well due to its advanced ICT infrastructure and its movement towards adoption of Internet of Things (IoT) an other emerging technologies.

The IESE Business School in Barcelona has released the data for the world’s smartest cities for 2018. For the second year in a row, New York has been declared the smartest city in the world, according to the IESE Cities in Motion Index. London and Paris also maintain their positions just behind the big apple, taking the second and third spots respectively.



1.1.1 ANATOMY OF A SMART CITY

There is no doubt that the city will be the defining feature of human geography for the 21st century.

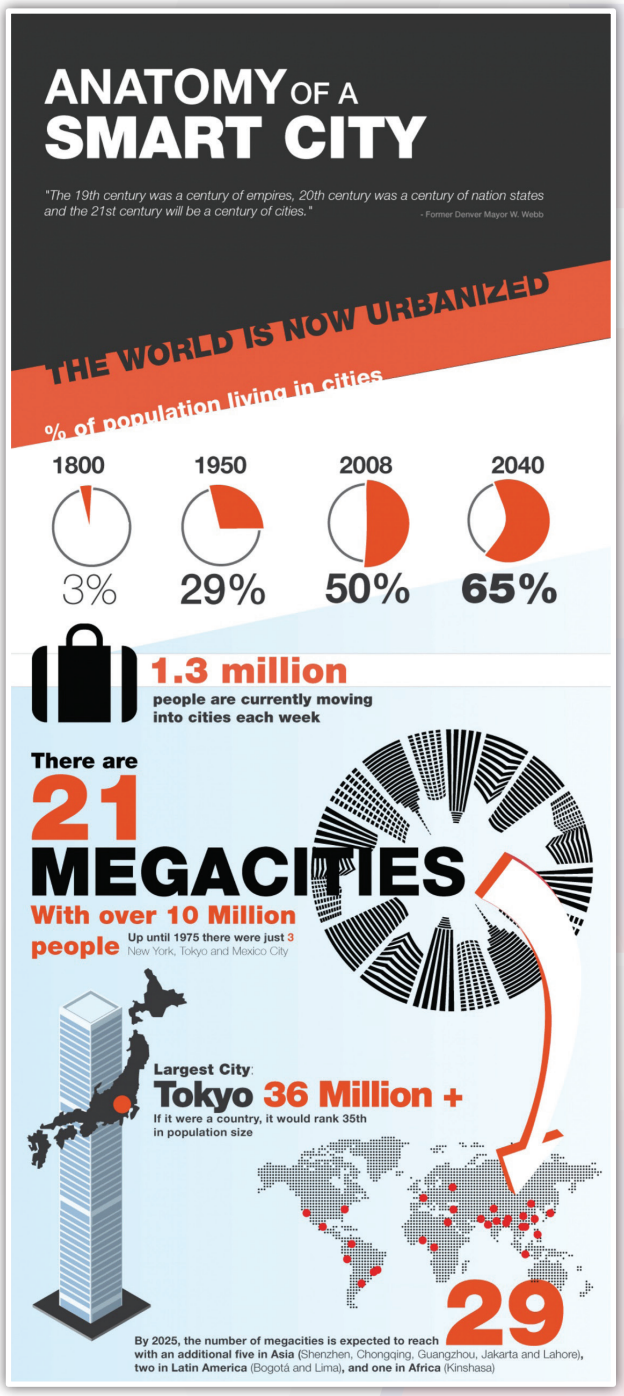
Globally, there are 1.3 million people moving to cities each week — and by 2040, a staggering 65% of the world's population will live in cities.

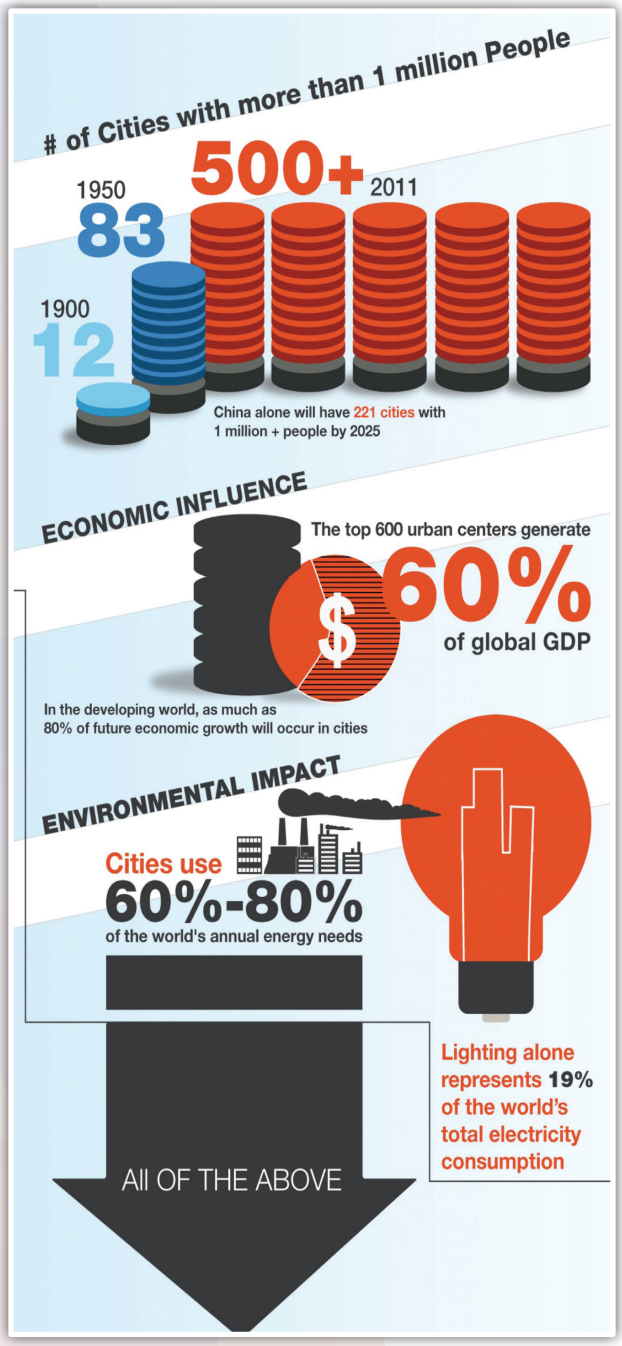
At the same time, the 600 biggest urban areas already account for 60% of global GDP, and this will only rise higher as cities become larger and more prosperous. In fact, experts estimate that up to 80% of future economic growth in developing regions will occur in cities alone.

1.1.2 THE SMART CITY: A NECESSARY

As cities become an even more important driver of the global economy and wealth, it's becoming crucial to ensure that they are optimized to maximize efficiency and sustainability, while enhancing the quality of life in each urban conglomeration.

Today's infographic from Stratfor helps define the need for smart cities, and it also gives great examples of how technology can be applied in urban settings to facilitate cities that work better for their citizens.





Source : https://worldview.stratfor.com/article/

The need for SMARTER CITIES

DRIVEN BY:

Sensors + Networks + Engagement

RESULTING IN:

REAL-TIME URBAN INFORMATICS

With the combination of low power sensors, wireless networks, and web and mobile-based applications, Smart Cities have arrived.

DEVELOPED CITIES



MEASUREMENT: Your city as a platform

ENVIRONMENT

By way of new sensor networks the accurate monitoring of environmental conditions like pollution levels, wildlife counts, and water runoff all become possible.

dontflush.me

The idea behind this project is to use sensors measuring levels in Combined Sewer Overflows and an SMS alert system to enable local residents to reduce their wastewater production before and during an overflow event to avoid polluting their local waterways.



SAFETY

Structural Health Monitoring of buildings, bridges and dams as well as advanced warnings systems in emergency situations can now be put in place.

ガイガーマップJp Geiger Maps-jp

After receiving incomplete radiation level information from authorities after the Japanese earthquake a group of individuals took it upon themselves to start a project using open source hardware & data to generate crowd-sourced geiger maps and readings across Japan.



TRANSPORATION

Through sensors embedded in roadways and street lights, real-time transit and traffic can be managed for the purpose of reducing travel time and fuel inefficiencies.

STREETLINE

Through Streetline's Parker application, and locally embedded wireless sensors, users can identify real time availability of parking spaces on their phones and city officials can better manage and price their infrastructure and resources.



UTILITES

A smart utility grid will empower end users to be more aware of their energy uses, and allow utility companies to deliver only as much energy or water as is required.

A new system installed by IBM in the country of Malta integrates both water and power systems, and is able to identify water leaks and electricity losses in the grid. 250,000 interactive meters monitor real time usage, set variable rates, and reward customers who consume less energy.



BUILDINGS

Smart Buildings utilize monitoring devices that track usage and empower users and service providers to better control and reduce electricity demands.

nest

The Nest thermostat is enabled with both Zigbee and Wi-Fi chips, so that it can be connected to and managed from your mobile phone or online. The thermostat also can learn from your usage patterns and adapts to your behaviors and preferences over time.



What does this look like in DEVELOPING CITIES?

Shadow Cities | Informal Settlements | "Slums" | Favelas



The majority of world population growth will occur in the urban areas of developing countries, whose population is projected to increase

2.5 billion in 2009
TO
5.2 billion in 2050

2x

This number is expected to double to 2 billion by 2030

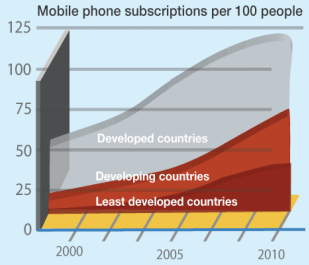
1 billion

people call "slums" home today

The UN defines a slum as a household that lacks access to one or more of the following:

- **Access to improved water**
- **Access to improved sanitation**
- **Security of tenure**
- **Durability of housing**
- **Sufficient living area**

One bright spot for the world's poor has been increased access to cell phones and information:



5 billion There are: mobile subscriptions worldwide in 2011

Perspective: In India there are 670 million cell phone subscriptions and only 366 million people have access to private toilets.



Nokia 1100 - The best selling phone of all time with over 250 million units sold

Leading to new ways for the urban poor to manage their environment

Mapping & ACCURATE REPORTS



Ushahidi

The open source Ushahidi platform serves as an initial model for what has been coined as 'activist mapping' - the combination of social activism, citizen journalism and geospatial information sent via mobile.

Rede Jovem

The Rede Jovem project used citizen reporters, cell phones, and an open source Wikimap application to map and gain awareness for five slums (home to 150.000 residents) in Rio de Janeiro.

News & RESOURCES



CGNet Swara

CGnet Swara is a citizen journalism channel in Chhattisgarh, India, that allows citizen journalists and interested parties to call a phone number to record or listen to local news content.

BBC জানালা

BBC Janala provides locals access to hundreds of free English language audio lessons. This is used to further educate and open opportunities to improve the country's economic growth.

Finances & WORK



JANA

Jana (formerly txteagle) mission is to offer global organizations access to emerging market consumers via their phones. Users are compensated with cell phone air time for surveys that are completed via SMS (Air time is increasingly used as a form of currency to purchase real goods).

M-PESA

M-PESA allows Kenyans to make cash withdrawals, deposits, and transfers through their mobile phone and caters specifically to customers that don't have access to traditional banking systems.

OUTLOOK

FINANCIAL

The Smarter cities IT market opportunity is expected to be:

$34 Billion annually

CIVIC & ENVIRONMENTAL

Cisco estimates that cities that run on information can improve their energy efficiency by **30%** within 20 years.

YOU + SERVICES + NETWORKS + OPEN DATA + SENSORS =

ADAPTIVE SENSEABLE EFFICIENT Cities

Postscapes
Tracking the Internet of Things

SOURCES:

The World in 2010: ICT Facts and Figures - ITU
World Urbanization Prospects, the 2009 Revision - UN
Effect of Mobiles on Socio-economic Life of Urban Poor - Ankur Sarin Rekha Jain
Preparing for China's urban billion - McKinsey Global
The Challenge of Slums: Global Report on Human Settlements 2003 - UN
The Transition to a Predominantly Urban World and its Underpinnings - David Satterthwaite
Raising the I.Q. of City Services - NYTimes
How Mobile Devices Are Changing the World's Information Ecosystem - Center for International Media Assistance
Raising the I.Q. of City Services - NYTimes

PROJECT LINKS & IMAGE CREDITS:

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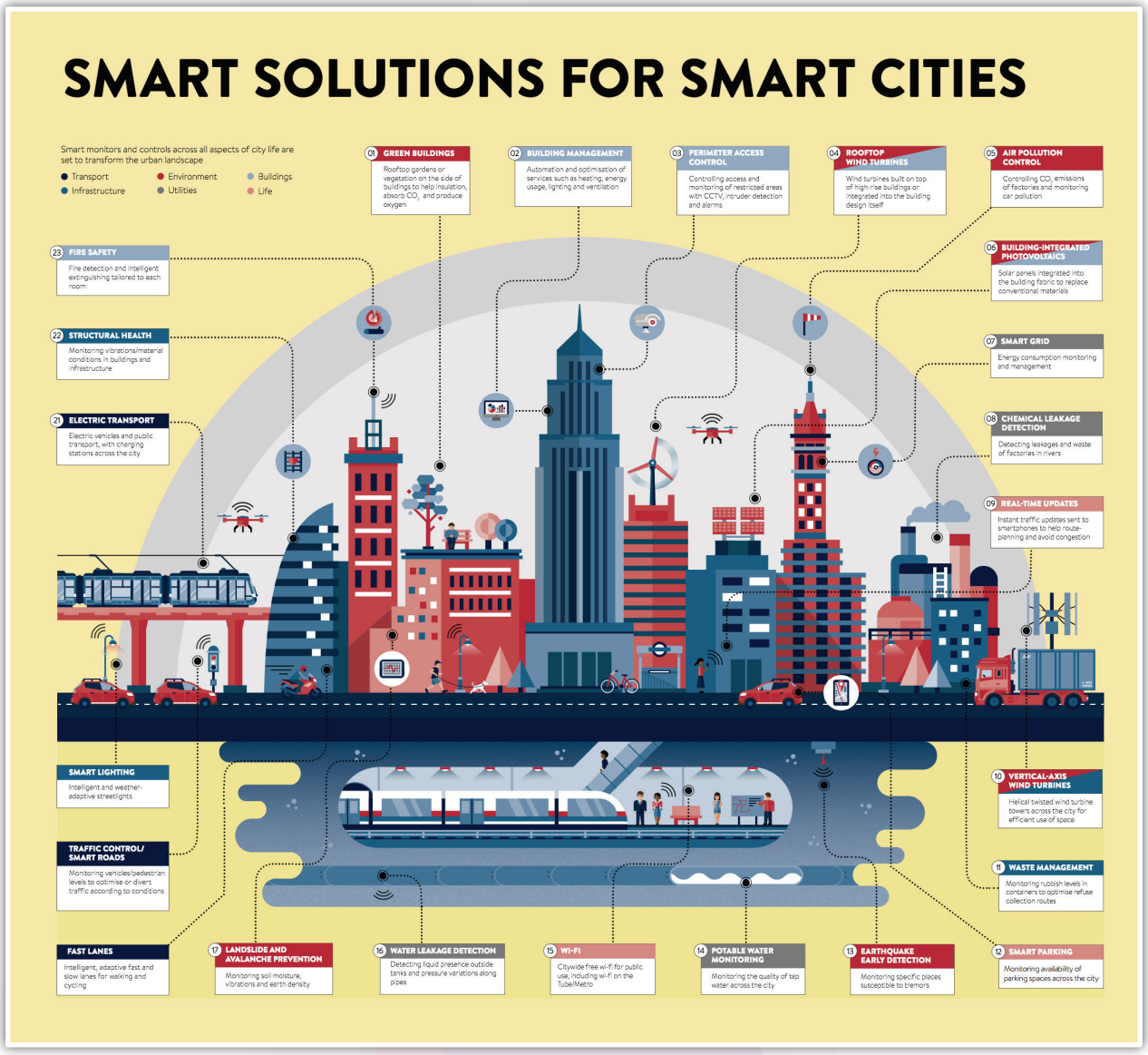
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Source : https://worldview.stratfor.com/article/

1.1.3 FEATURES TO TOMORROW'S CITIES

Smart cities will use low power sensors, wireless networks, and mobile-based applications to measure and optimize everything within cities. Here are just some examples:



Source : https://www.visualcapitalist.com/

Smart city solutions will fall into six broad categories, transforming the urban landscape:

1. Infrastructure

Smart lighting is one of the most important solutions that will be implemented in citywide infrastructure. While smart lighting sounds trivial at first glance, it's worth noting that lighting alone consumes a whopping 19% of the world's total electricity.

2. Buildings

Heating, energy usage, lighting, and ventilation will be managed and optimized by technology. Solar panels will be integrated into building design, replacing traditional materials. Fire detection and extinguishing is tailored to individual rooms.

3. Utilities
Smart grids (used for energy consumption monitoring and management), water leakage detection, and water portability monitoring are just some smart city aspects on the utilities side.

4. Transport
Intelligent, adaptive fast lanes and slow lanes (cycling, walking) will be implemented, while charging stations through the city will power EVs.

5. Environment
Air pollution control, renewable energy, and waste management solutions will make for greener cities. Rooftop gardens or side vegetation will be integrated into building designs, to help with insulation, provide oxygen, and absorb CO_2.

6. Life
There will be citywide Wi-Fi for public use, while real-time updates will provide citizens information on traffic congestion, parking spaces, and other city amenities.

1.1.4 THE EFFECT?

Cisco estimates that smarter cities will have impressive increases in efficiency: using many of the above concepts, cities can improve energy efficiency by 30% in 20 years.

Simultaneously, it's estimated that the broad market for smart cities products and services will be worth $2.57 trillion by 2025, growing at a clip of 18.4% per year on average.



1.2 CONCEPT OF SMART CITY GLOBALLY

The concept of smart cities typically has 3 elements among action plans and papers in several countries, namely:

a. Using information, communication and digital technology to address urban challenges, improve urban management and quality of life, sustainability, efficiency and security.

b. Increased economic and business activities

c. Continuous public participation and urban innovation.

Generally, there is no universally accepted definition of smart cities. Although there is no standard for defining smart cities, it can still be seen and measured from the management efficiency and improvement of the municipal and urban quality of life. Among the smart city's definition refined by researchers across the globe are as follows:

Figure 1.1 : The Smart City's Definition Refined by Researchers Across the Globe

01

A city that **monitors and integrates** conditions of all of its critical infrastructures, including roads, bridges, tunnels, rails, subways, airports, seaports, communications, water, power, even major buildings, can better optimize its resources, plan its preventive maintenance activities, and monitor security aspects while maximizing services to its citizens (Hall, 2000)

02

A city well performing in a **forward-looking way in economy, people, governance, mobility, environment, and living,** built on the smart combination of endowments and activities of self-decisive, independent, and aware citizens (Giffinger et al., 2007)

03

A city to be smart when investments in **human and social capital** and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance (Caragliu et al., 2009)

04

Information technologies represent the key concept. The vision of an intelligent city is not confined to economic excellence that can be led by information technologies, but an integral part of that vision is its concern for **the quality of life for the ordinary citizen** (Mahizhnan, 1999)

05

A Smart City is a city well performing in a forward-looking way in six 'smart' characteristics, built on the 'smart' combination of endowments and activities of **self-decisive, independent and aware citizens**. (www.smart-cities.eu)

1.3 WHY SMART CITY INITIATIVE IN MALAYSIA

The emphasis towards making Malaysian Cities into smart cities are strengthening digital infrastructure has been the fore front of Malaysia's development plans such as Eleventh Malaysia Plan (11MP), National Physical Plan 3 (NPP3) and National Urbanization Policy 2 (NUP 2).

The Government of Malaysia has started to encourage all local authorities to generate new ideas and new mode of promoting smart city planning, smart city management services and smart city administration. With that, PLAN Malaysia has started to prepare the overall framework for Smart Blueprint for Smart Cities development in Malaysia. The blueprint will provide broad guidelines to all local authorities in Malaysia in the implementation and monitoring mechanism on Smart City Development. The development of smart cities is also to uplift Malaysia Cities Competitiveness and to prove Malaysia commitment to embark on global agenda such as Sustainable Development Goals (SDGs).

Key players such as TM Malaysia also has prepared the Communications and Multimedia Action Plan (CMAP) 2020 to ensure full supporting technological enablers in supporting smart city development. The action plan also provide assistance in raising Malaysia's digital capabilities to pursue innovation.

It is important to note that Smart City models have different purposes and areas by region, and it is important for Putrajaya to identify its city's goal and objectives in defining the Putrajaya Smart City.

The vision for Putrajaya is to transform itself from a Garden City into a Green City by the year 2025. In doing this, it has identified 4 Big Moves (as shown in figure 2.1) and 8 Policies in its gazette Structure plan. These 2025 long-term plans are key fundamental attributes of a smart city and hence the current planning and development of Putrajaya sets the pathway towards such transformation.



2.0 INTRODUCTION

The seat of the Federal Government administration was shifted from Kuala Lumpur to Putrajaya in 1999. The city was planned as a Garden and Intelligent city. The part about being a Garden City was fully implemented with 38% of the city is reserved for green spaces. The City master plan incorporated a network of open spaces and wide boulevards, so much so that the Federal Administrative Capital is indeed green in its physical outlook.

However, the second part of the plan – that being the Intelligent City – has not been fully materialised. In the era of globalization and city competitiveness, many cities have embarked and leveraged on new emerging technologies to further their economic growth and sustenance. Hence, the City of Putrajaya now has seriously looked at the concept of being a "Smart City" to meet up with the two-pronged vision as initially set out at its inception.

2.1 PUTRAJAYA AS A SMART CITY

The city of Putrajaya has come a long way since its conceptualization in 1995. Putrajaya was planned as a Garden and Intelligent City and it has progressed remarkably well since its inception. The landmark buildings now stand tall in the heart of Putrajaya, portraying Malaysia as a modern and developing country. With the progression of Putrajaya becoming a Smart City, it is hopes that with the implementation of Internet of Things (IoT) and other information and communication technology (ICT) innovations, Putrajaya Corporation can further propel the city becoming global model city. Though there is no standard definition of "smart city", we would like to refer a smart city as a city which aims at a better quality of life and sustainability utilizing information and communication technology. As an effective measure to respond to urban challenges and climate change, smart city projects has been increasingly implemented in many countries across the world since 2010.

Today most cities primary purpose of smart cities is to deal with climate change issues in developed countries and to enhance urban competitiveness in developing countries, including China and India, whose sizable, government-led smart city projects capture the world's attention.

It is important to note that Smart City models have different purposes and areas by region, and it is important for Putrajaya to identify its city's goal and objectives in defining the Putrajaya Smart City.

The vision for Putrajaya is to transform itself from a Garden City into a Green City by the year 2025. In doing this, it has identified 4 Big Moves (as shown in figure 2.1) and 8 Policies in its gazette Structure plan. These 2025 long-term plans are key fundamental attributes of a smart city and hence the current planning and development of Putrajaya sets the pathway towards such transformation.

Figure 2.1 : The 4 Big Moves stated in the Putrajaya Structure Plan 2025



2.2 PUTRAJAYA SMART CITY AND THE NEW URBAN AGENDA (NUA) AND SUSTAINABLE DEVELOPMENT GOALS (SDGs)

Putrajaya Smart City can play a major role in the implementation of the New Urban Agenda and the Sustainable Development Goals. New technologies are tools that can be put to use to achieve the 17 goals of the SDGs. For example, the use of technology can be used to develop baseline data for informed decision making and capacity building.

New technologies are also tools towards achieving the objectives of the New Urban Agenda (NUA). The provision of communication technology is stated as a part of **Goal 1: Providing basic services for all citizens,** (including communication technologies)

11th Malaysia Plan

The 11th Malaysia Plan makes a policy statement regarding smart cities – in that "a framework will be developed to prioritise areas of focus in the development of smart cities. A fundamental initiative to realise the migration to smart cities will be the development of smart communities.

National Physical Plan 3

The National Physical Plan 3 has also included the importance of broadband technology in the effort towards further growth of the economy and better management of physical resources. It called for a 100% coverage of broadband throughout the Peninsular Malaysia in order that all development goals will be achieved by 2035.

National Urbanization Plan

The city of Putrajaya has been identified as a Global City under the National Urbanization Plan 2, Hence it is ever more urgent that the City develops its full potential as a digital smart city in order to be globally competitive.

One key effort is towards a Data Driven City that can assist Putrajaya to make better decisions. Putrajaya as a smart city must be driven by targets for better livability, greater workability, efficiency and enhanced sustainability.

Hence a smart city need a city planning and management approach that is focused on digital connectivity, interoperability and data sharing and management. This will enable us to understand the level of performance of a particular component of the city as well as allow the city to know if their investments and interventions are making a difference.

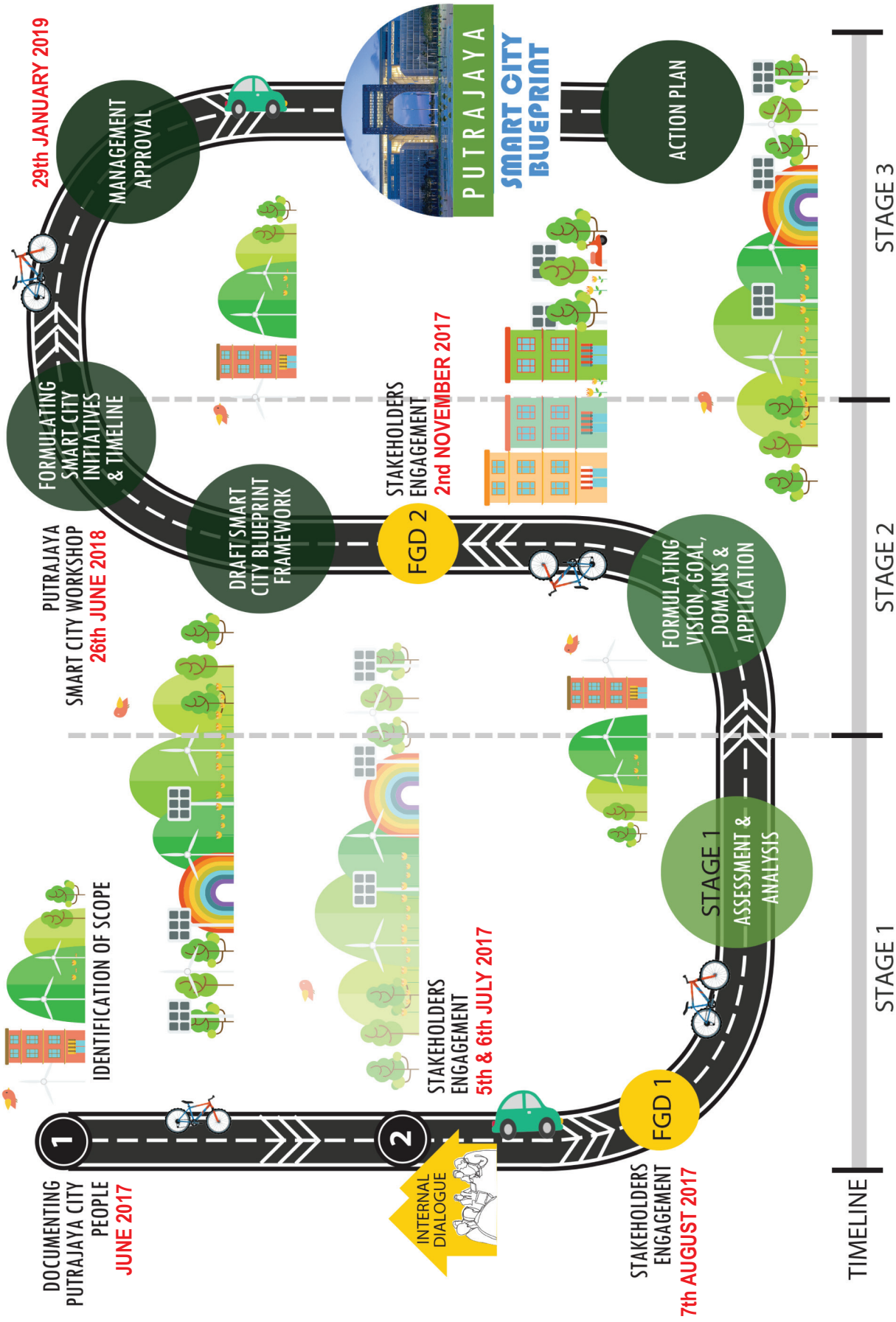
Putrajaya Smart City can also ensure that it uses the information and communication technology as well as the internet to address the urban challenges in Putrajaya. As Putrajaya grows and develops, it shall face a variety of challenges, including job creation, economic growth, environmental sustainability, city management and social resilience. Given these trends, understanding where the city is in the evolution of the Internet is inevitable and critical to future city-planning processes.

2.3 THE PROCESS FOR FORMULATION OF THE PUTRAJAYA SMART CITY BLUEPRINT

The objective of the Putrajaya Smart City Blueprint is to guide and provide recommendations to the Putrajaya Corporation and all related departments / agencies in Putrajaya for formulating policies, strategies and action plans in the implementation of Putrajaya Smart City.

The blueprint consists of Putrajaya Smart City vision, goals, domains and smart city applications, initiatives and implementation timeline (quick win, short term, medium term and long term).

Figure 2.2.: The Process for Formulation of the Putrajaya Smart City Blueprint



3.0 PUTRAJAYA SMART CITY BLUEPRINT

3.0 PUTRAJAYA SMART CITY BLUEPRINT

This part of the report will consolidate the previous reports in order to formulate the Putrajaya Smart City Blueprint. This section will table the following:

a. The objectives of each domain
b. The smart initiatives of current and future
c. The desired outcome of the initiatives
d. The timeline for implementation and key players of the initiatives.

3.1 THE VISION STATEMENT

The Vision of any effort or desire is pertinent so that all strategies and actions can be directed towards that one vision. To arrive at the Vision, the responses from the internal dialogue (on what is a Smart City and what will be its benefits), and the shared vision worked out from the FGD1 and FGD 2 have been collated and the most often quoted word taken and put together to form a single Vision. The vision of a smart city shall focus on improving urban sustainability and quality of life, the use of innovative technology as an enabler. It is therefore recommended that the Vision Statement for Putrajaya Smart City Blueprint is:

"SMART URBAN LIVING for SUSTAINABILITY & A HIGHER QUALITY OF LIFE"

3.2 THE OBJECTIVES

The objectives for Putrajaya to be a Smart City are:



These objectives are in line with the United Nations' SDGs and the New Urban Policy (NUP), of which Malaysia is a signatory.

Based on the outcomes from the internal dialogue and the shared vision worked out from the FGD1 and FGD2, smart city objectives should address the following four (4) urban dimensions that will then derive into seven (7) smart city domains highlighted as the catalysed in leading to the Putrajaya Smart City Blueprint.

Figure 3.1.: The Four (4) Urban Dimensions

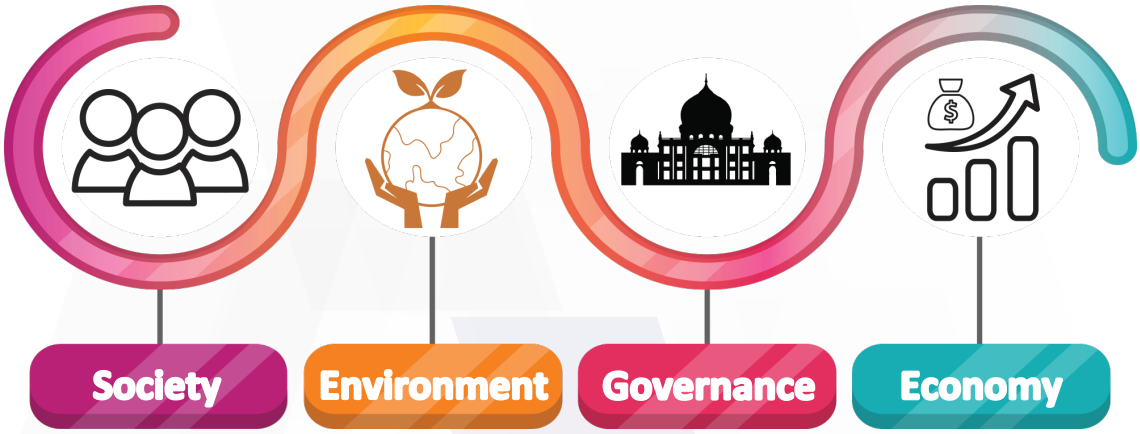
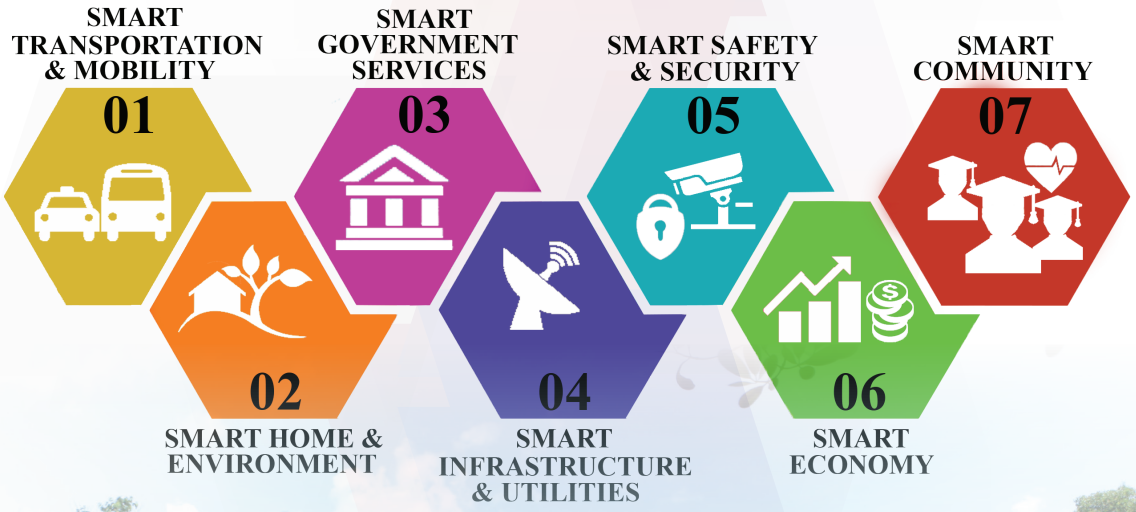


Figure 3.2.: The Seven (7) Smart City Domains





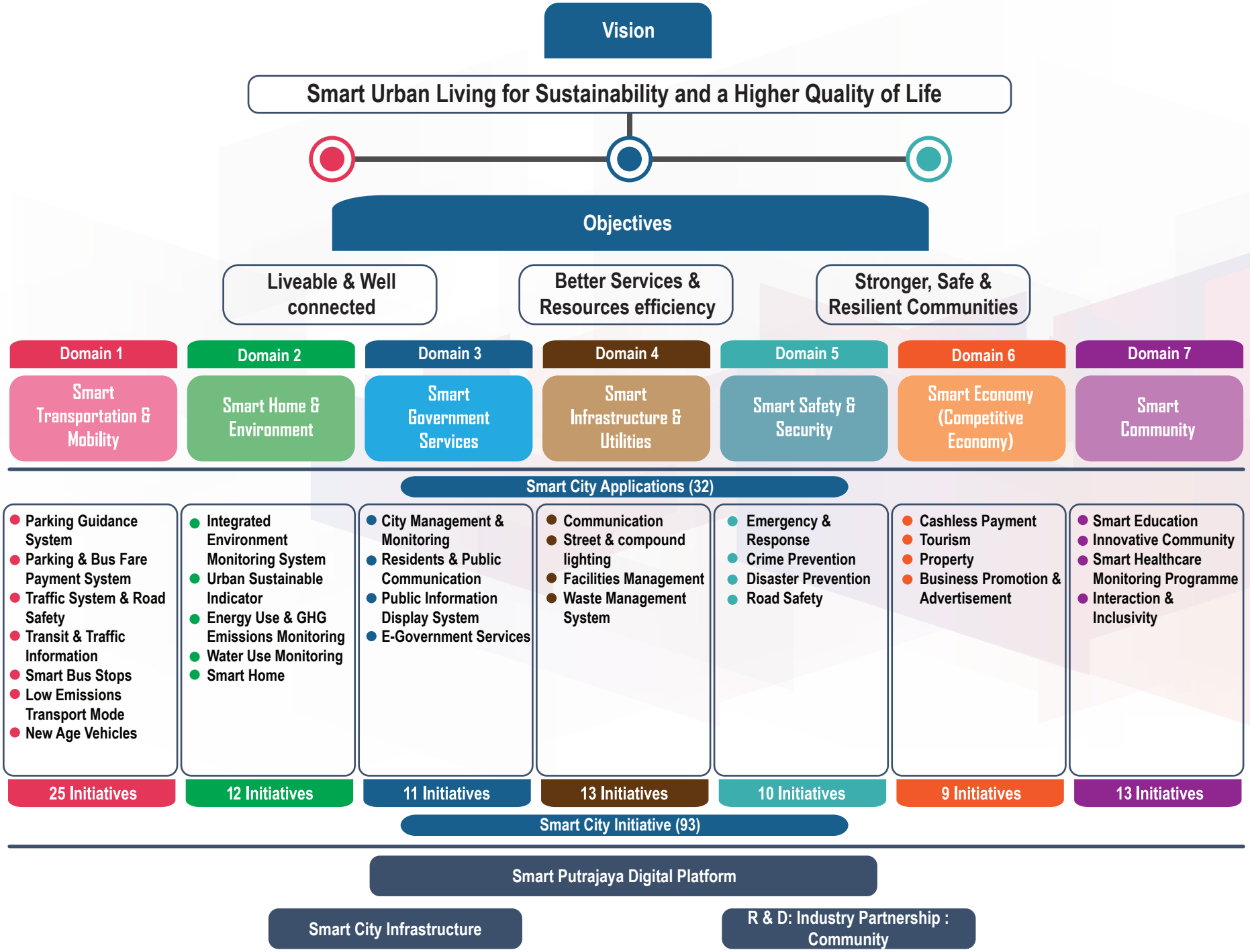


Figure 3.3 : The Putrajaya Smart City Framework

4.0 PUTRAJAYA SMART CITY FRAMEWORK

The Putrajaya Smart City Framework shall be based on the 7 Domains . The applications to be developed and implemented, the objectives and desirable outcomes are described in general.

4.1 DOMAIN 1
SMART TRANSPORTATION AND MOBILITY

Objectives:

- Provide information on available car parking spaces and their location in the city;
- Facilitate commuters' information on availability and frequency of public transport in the city;
- Reduce carbon emission and air pollution through the use of efficient modes of public transportation
- Alleviate traffic congestion issues through effective planning and enforcement
- Smart services for community in order to reduce the use of transportation mode

Smart Application	Smart Initiative	Desired Outcomes
Parking Guidance System	Electronic Board displays to inform on available car parking spaces by location.	Efficient use of car parking spaces available in the city especially during peak hours and during events.
	Mobile apps for parking guidance	• Reduces circulating traffic searching for parking • Convenience for drivers • Clear roadways
	Illegal parking control	• Prevention of illegal parking a long roads
Parking & Bus Fare Payment System	Pay by phone (to be integrated with Putrajaya Mobile)	Maximize the convenience of use of public transportation
	Automation Ticketing & payment System	
	Cashless bus fare payment system (e.g: e-wallet)	
Traffic System & Road Safety	Smart Traffic Lights(Advance Traffic Control System)	• Continuous traffic flow for emergency vehicles • Improve emergency respond time
	Traffic condition & safety monitoring (Smart CCTV)	Increase and enhance road effectiveness and efficiency
	Traffic calming	• Improve road safety • reduce accident rate
	Dedicated lane for all categories of vehicles	Reduce public transport travel time and improve safety
Transit & Traffic Information	Multi-lingual bus arrival information	To achieve Modal Split 70:30 by maximizing the convenience of use of public transportation and general private transport user
	Provide bus loading info using colour coding (e.g: green+available seats; yellow=standing space; red = limited standing)	
	App to provide real-time information on public transport	
	Variable Message Signs to display short traffic condition messages	
	Journey Planner	
	Traffic count using smart CCTV	

Smart Application	Smart Initiative	Desired Outcomes
Smart Bus Stops	Motion sensors (night time) for energy saving	Energy saving and reduction of carbon emission
	Sensor to monitor real time facility problems.	
Low emissions transportation mode	Bike sharing facilities & services	Getting more people to cycle and not having to purchase their own bicycles
	Ride sharing (e.g: GRAB)	Energy saving and reduction of carbon emissions
	Eco ride (tourists)	
	NGV & EV buses	
	Rail based transport	
	Improvement of bicycle lane and pedestrian walkways	• Increase number of people walking & cycling • Improve safety for user
New age Vehicles	Autonomous Vehicles	Providing the people with an alternative clean energy vehicular mode through autonomous vehicles



4.2 DOMAIN 2
SMART HOME AND ENVIRONMENT

Objectives:

- Ensuring that the environmental conditions of Putrajaya will be constantly monitored to allow for a high quality environment;
- Provide for effective and efficient water management to reduce wastage;
- Monitoring the energy use of buildings in the city so as to reduce consumption, and save on carbon emission.

Smart Application	Smart Initiative	Desired Outcomes
Integrated Environment Monitoring System	Weather monitoring (temperature, rainfall, wind speed and humidity)	• Lake water pollution, weather and air quality monitoring • Pollution sensors are installed for monitoring of air quality and weather. • Citizen can access the info of 24 hour API value • The integrated air quality, weather and lake water quality reporting online
	Air quality monitoring	
	Supervisory Control And Data Acquisition (SCADA) for Lake water Pollution Prevention Control.	
	Putrajaya Lake & Wetland Management & Operational System - PLWMOS (lake water quality, flora & fauna)	
Urban Sustainability Indicator	Malaysia Urban-Rural (MURNInet) National Indicators Network for Sustainable Development	Proposed opportunities and potential improvements to improve the sustainability of a city
Energy Use & GHG Emissions Monitoring	Real time energy use monitoring for buildings (including solar PV performance)	Optimize the energy consumption within the building throughout change of behavior and use of technologies
	Green energy	To increase the usage of renewable and clean energy in the city.
	Real time monitoring solar PV performance for government buildings	Help in setting the target for energy use reduction in the building
	Building Sector Energy Use & Carbon Reporting Programme ($BECO_2R$) for non residential building (online system & apps)	• To accelerate urban energy efficiency through existing building stocks. • To sustain building stakeholder's continuous engagement in CO_2 mitigation. • To establish common carbon metric (CCM) at city level.
	City scale GHG inventory system	Monitoring GHG emissions at city level for reduction measure review.
Water use, supply and monitoring	Real time water use monitoring	Water efficiency message to the people by the water utility company
Smart Home	• Smart home systems (sensors, solar panel, smart card access wi-fi , phone coverage, smart TV. CCTV, Home watch by smartphone), • Smart Energy/Green Initiatives (solar panel, SPAH, Invertor electrical appliances), • Create a special zone to implement Smart Home concept in Precinct 12,15 & 19	Providing a choice for residents to monitor their homes, to control the air condition, and electrical appliances remotely when not in the home.

4.3 DOMAIN 3
SMART GOVERNMENT SERVICE

Objectives:

- Provide the basic infrastructure to upgrade the city's capabilities and capacities towards a Smart City status;
- Provides the basis for a more vibrant economy ;
- Creates a more efficient management and maintenance regime;

Smart Application	Smart Initiative	Desired Outcomes
City management & monitoring	Putrajaya Command Centre (PCC)	An integrated centre that monitors the city 24hrs on traffic, safety, disaster, crowd control, etc Express monitoring and advisory system such as vehicle recovery services – to detect accidents, or any incidences;"
Residents & Public communication	Putrajaya Mobile Apps	Citizens are provided with information regarding public administration, processes of civil affairs
Public Information Display System	Digital information boards at strategic areas for latest news/events/promotion.	Citizens are aware of situations throughout the city in order to make decisions on travel routes, and other activities
E- Government Services	Digitalization of land inventory and cadastral data (Land use Governance)	Assists land owners, developers in obtaining information on purchase or selling of properties;
	Community Data Profiling	Create greater convenience for citizens, saving time, energy and resources
	Electronic submission of development applications (OSC 3.0)	• Expedite development applications and increase efficiency in the monitoring of these applications; • greater transparency
	Complaints online	Create greater convenience for citizens, saving time, energy and resources
	Payment online	
	Online License Application	
	Online Booking of venues	
	Online registration system (forum/ workshop/training)	

4.4 DOMAIN 4
SMART INFRASTRUCTURE AND UTILITIES

Objectives:

- Provide the basic infrastructure to upgrade the city's capabilities and capacities towards a Smart City status;
- Provides the basis for a more vibrant economy ;
- Creates a more efficient management and maintenance regime;
- Saves costs for the city in the long term through better management of street lights and waste disposal.

Smart Application	Smart Initiative	Desired Outcomes
Communication	Centralized Radio Access (C-RAN)	Centralized Radio Access (C-RAN) is a centralized, cloud computing-based architecture for radio access networks that supports 2G, 3G, 4G and future wireless communication standards. This is a basic necessity towards becoming a Smart City
	Free Public Wi-Fi	Provide free communication capabilities for all citizens and visitors all throughout the city
	Wayside Equipment	
	Fiber cabling	
Street & compound Lighting	Energy saving street light	Create & maintain more energy efficiency public lightings
	Energy saving compound light	
Facilities Management	Building Integrated Modelling (BIM)	Provide data and resources for all through professionals collaborate
	City Lighting Management	To monitor all types of façade lighting and to ensure that the lighting is maintained as per Development Order (D.O.) Approval and in line with Putrajaya Lighting Masterplan.
	Sensors for on-site facilities	If something goes wrong, the PCC can detect conditions and information sent to the responsible department/ agency for immediate repairs.
	Accessible facilities information (OKU)	provide information on location of facilities in the built environment and their wayfinding that are accessible to all including the disabled, the elderly and children.
Waste Management System	Sensors in garbage bins	Sensors in garbage bins send alerts when full to enable trucks to optimize their routes to prevent trips for empty bins.
	GPS of garbage trucks	Location of garbage trucks and efficiency of collection system
	Material Recovery Facility (MRF)	Minimize the amount of waste that is being sent to landfills

4.5 DOMAIN 5
SMART SAFETY AND SECURITY

Objectives:

- Provides the infrastructure for emergency situations for the public;
- Creating a platform for citizen's assurance on the safety and security levels of the city;
- Providing for an inclusive city that does not marginalize any groups in terms of communication needs;
- Provides for an emergency response system in times of emergencies or natural disasters.

Smart Application	Smart Initiative	Desired Outcomes
Emergency & Response	Panic buttons	If a citizen shouts or screams in an urgent situation, sound sensors detect this and CCTV's nearby automatically turn their angle to show the center the images of the situation
	Putrajaya Command Centre (PCC)	• Image recognition function • cameras can monitor and detect whether the detected object or person (s) is in a fight, has collapsed, is wandering or is trespassing
	Communication Mode for OKU	Inclusive city that caters to special needs of its citizens and visitors.
Crime Prevention	Smart CCTV (safety surveillance)	• Image recognition function • cameras can monitor and detect whether the detected object or person (s) is in a fight, has collapsed, is wandering or is trespassing
	Licenses Plate Recognition System (LPRS)	• vehicular monitoring; • collect plate number to find wanted vehicles
	Neighbourhood watch	• Educating residents of a community on security and safety • Achieving safe and secure neighbourhoods
Disaster Prevention	Dam Integrity Assessment	Collects information in real time on emergencies – natural disasters – flash floods, landslides, strong winds – by connecting and integrating with external agencies such as the Fire and Rescue Department, the JPS, JKR, etc
	Possible Disaster Assessment	
Road Safety	Beat Automated Traffic Camera	Reduce road accident at traffic light junction
	Speed Awareness Sign	Improve road safety awareness

4.6 DOMAIN 6
SMART ECONOMY

Objectives:

- Provide for an attractive city platform to encourage new ways of doing businesses;
- Allowing for information dissemination in different economic activities of the city to encourage increased services and investments.

Smart Application	Smart Initiative	Desired Outcomes
Cashless payment	e-wallet	Citizens and visitors can use on-line payment for most government services in Putrajaya
	e-kiosk	
Tourism	Smart app for city attractions (Putrajaya Mobile)	A smart app on all sites and attractions in the city with real-time information
	Real time data collection for tourists information	Data collection via GPS, apps, etc on actual numbers of tourists daily, monthly and annually to the city to assist in development, upgrading of tourism products and visitors needs.
		A feedback app for visitors to rate the sites and services of tourism attractions in the city.
	Tourism feedback (visitors to rate the sites & services)	A feedback app for visitors to rate the sites and services of tourism attractions in the city
Property	Smart app to view (property availability), sell & buy properties (real time information on transaction prices)	A special dedicated app on latest information of property developments available on the market – either just approved, under construction ; newly launched, etc.
Business Promotion & Advertisement	Digital billboards	To control from central location to blast out advertisements to digital billboards.
	Smart app for business promotion (Putrajaya Mobile)	A smart app to view, sell, buy properties within the city with real time information on transaction prices, etc.
	Digital Free Trade Zone (DFTZ) in Putrajaya	to provide incentives and encourage adoption of technology by business community
	To set up incubator/lab as to encourage business community to adopt technology	To accelerate and facilitate the development of business apps.

4.7 DOMAIN 7
SMART COMMUNITY

Objective:

- Enabling the infrastructure to build up a smart community towards sustainability;
- Providing opportunities for citizens to provide feedback and suggestions to address issues as well as develop new opportunities for themselves;
- Provide opportunities for city residents to get a better education as well as to enroll in schools online
- Spread information and awareness through digital technologies

Smart Application	Smart Initiative	Desired Outcomes
Smart Education	Awareness program	Educate the community from all range of age on matters of environmental and etc
	Digital Library	Creating a platform to re-connect with others; face to face engagements as well as cross discipline engagements;
		Provide interactive displays on all subjects
	Online school admission	Partner with the Education department to provide online registration for all schools in the city
		Provide online registration for kindergartens, child care centres, etc
	Digital Classroom	• Transform traditional classrooms into digital classrooms. • Integrating technology into learning process in the classroom. The computer in schools. • Turning students as creators of knowledge instead being knowledge recipients.
Innovative community	Innovative centre (POINT)	To create a tech-community in Putrajaya
	Children-led climate change adaptive programme (e.g: GreenROSE@ PUTRAJAYA)	Enrich the young students with scientific knowledge infused together with values of green living, while instilling sense of responsibility and care for the environment.
Healthcare monitoring program	Tele-health services	Providing an App for citizens that will provide: • Immediate help or action for emergency cases such as collapse, fainting, etc. • Immediate link for emergency help that will immediately provide connect to the nearest hospital
	Real time information of health risk areas	Partnering with the Health department to inform citizens on areas of disease outbreaks such as dengue (integrate with Putrajaya mobile apps)
	Healthy diet information & education (integration with MyNutriApps)	Intergrade apps MyNutri Apps and Putrajaya Mobile Apps
	Information for dengue hotspot area (integration with iDengue)	Intergrade Mapping Putrajaya Corporation (for community Putrajaya) with apps I Denggi.
		Give a information and warning message to the community when in the hotspot area (Denggi hotspot area)

Smart Application	Smart Initiative	Desired Outcomes
Healthcare monitoring program	Information for dengue hotspot area (integration with iDengue)	Intergrade Mapping Putrajaya Corporation (for Community Putrajaya) with apps I Denggi.
		Give a information and warning massage to the community when in the hotspot area (Denggi hotspot area)
	Putrajaya Bebas Asap Rokok (PBAR): - centre/facility for stop smoking - online/app for list of non smoking areas in Putrajaya, tips/information to stop smoking - digital signage for non smoking area	List of non smoking area KOSPEN (Komuniti Sihat Pembina Negara) Tips / information to stop smoking"
Interaction & Inclusivity	City You-tube channel	Sharing city activities and news on you tube
	Community interaction platform	Encouraging discussions on issues and solutions



5.0 PUTRAJAYA SMART CITY APPLICATIONS AND INITIATIVES

This document only provides the framework for the City of Putrajaya to become a Smart City. There needs to be further works to further detail the Initiatives listed in part 5.0 above. The first step in the way forward is to identify the project or program that will be required to further implement each smart initiative and then to identify the potential financing of the project.

Secondly, the action plan for each program will need to be developed with the identification of the time frame, project partners, the implementing agency and the key indicators. All the programs and projects identified will be prioritized into quick win (less than 1 year; 2018), short term (1-2 years; 2018-2020); medium term (3-4 years; 2018-2022) and long term (more than 5 years; 2018-2025). The blueprint consist of seven (7) domain. Each of the domain is differentiate by colours. Table below shows the example of each domain and the smart initiative.

SMART INITIATIVES

Specified Project/ program to compliment every application/ service

OBJECTIVE

As a guidance to drive the smart initiatives

DESIRED OUTCOME

Result after implementing smart initiatives

IMPLEMENTATION APPROACH

Tools or technique used to achieve desired outcome

KEY PLAYERS

Internal Department

Agencies involved during the implementation and operation period.

Agency

Agencies involved during the implementation and operation period.

STATUS PROJECT

Status of the project whether:
- Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM

Estimated time to start the specified project/ program

Example Of Illustration & Best Practices

Images of Example & Best practices

DOMAIN 1
SMART TRANSPORTATION AND MOBILITY

SMART APPLICATION 1.1 : PARKING GUIDANCE SYSTEM

Smart Initiatives : Electronic board displays to inform on available car parking spaces by location
Objective : Provide information on available car parking spaces and their location in the city

DESIRED OUTCOME

1. Efficient use of car parking spaces available in the city especially during peak hours and during events.

IMPLEMENTATION APPROACH

1. Display the total availability of parking space during peak hours

KEY PLAYERS

Internal Department

1. Smart City Division
2. Road Division
3. BTMK

Agency

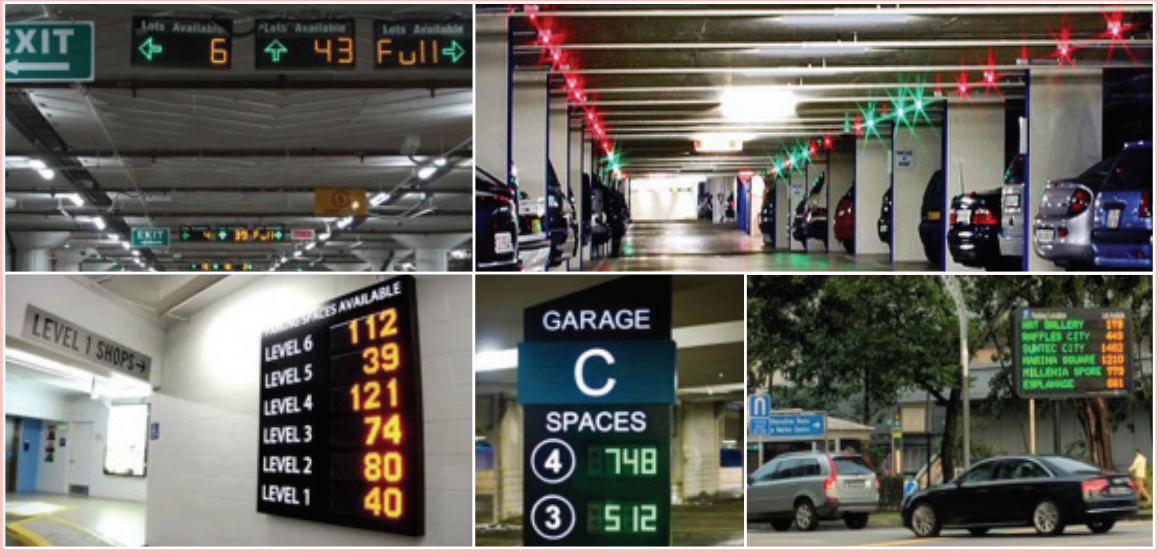
1. PAPTT

STATUS PROJECT

- Existing (to be expanded & enhanced)
- ✓ Future

TIMELINE

QUICK WIN — SHORT TERM — **MEDIUM TERM** — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.1 : PARKING GUIDANCE SYSTEM

Smart Initiatives : Mobile apps for parking guidance
Objective : Provide information on available car parking spaces and their location in the city

DESIRED OUTCOME

1. Reduces circulating traffic searching for parking
2. Convenience for drivers
3. Clear roadways

IMPLEMENTATION APPROACH

1. Integration Putrajaya mobile apps and Putrajaya Park by Phone (direction to parking)

KEY PLAYERS

Internal Department

1. Smart City Division
2. Road Division
3. BTMK

Agency

1. PAPTT

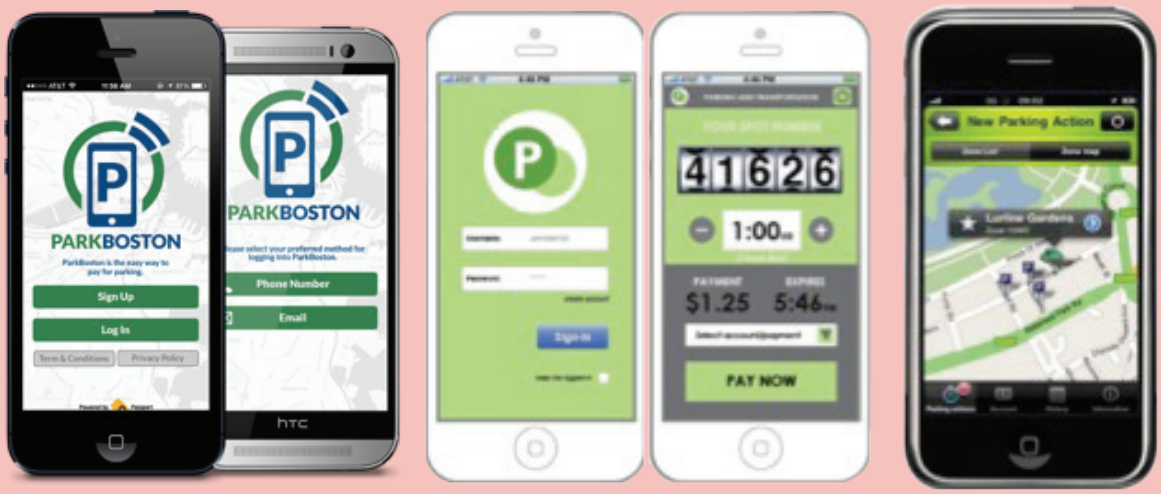
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.1 : PARKING GUIDANCE SYSTEM

Smart Initiatives : Illegal parking control
Objective : Smart services for community in order to reduce the use of transportation mode

DESIRED OUTCOME

1. Prevention of illegal parking along roads

IMPLEMENTATION APPROACH

1. The use of empty plot for temporary parking has to be formalized
2. Manual parking info signages (directional and info) has been implemented in core island and peripheral.
3. Integration with enforcement (clamping and towing)

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Road Division
4. Enforcement Division

Agency

1. PAPTT

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.2 : PARKING & BUS FARE PAYMENT SYSTEM

Smart Initiatives : Pay By Phone
Objective : Smart services for community in order to encourage the use of public transportation mode

DESIRED OUTCOME
1. Maximize the convenience of use of public transportation
IMPLEMENTATION APPROACH
1. Integrate with Putrajaya Mobile

KEY PLAYERS

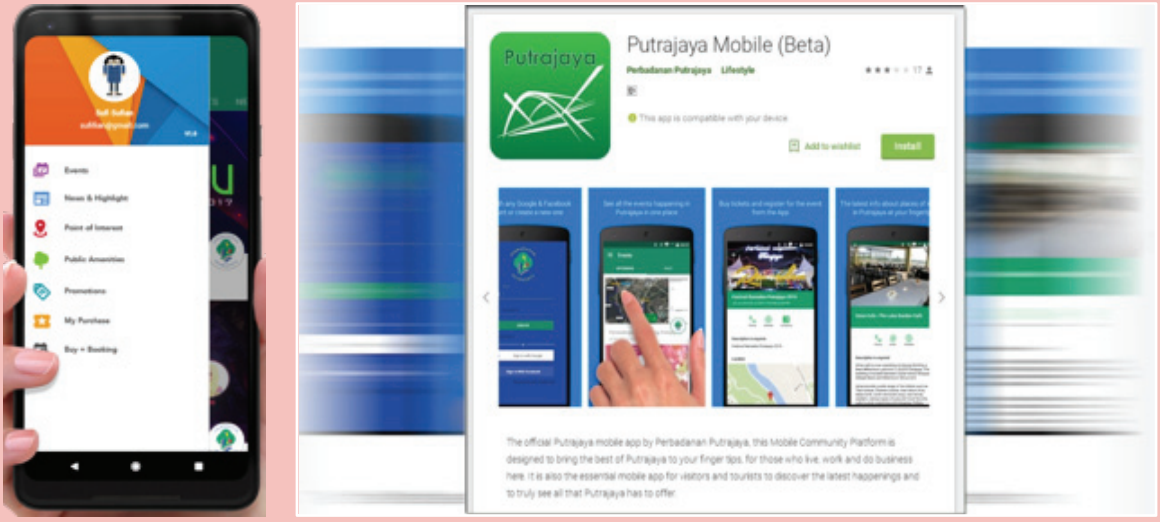
Internal Department	Agency
1. Smart City Division 2. BTMK	1. PAPTT

STATUS PROJECT

- ✓ Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN → SHORT TERM → MEDIUM TERM → LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.2 : PARKING & BUS FARE PAYMENT SYSTEM

Smart Initiatives : Automation ticketing and payment system
Objective : Smart services for community in order to increase the use of public transportation mode

DESIRED OUTCOME
1. Maximize the convenience of use of public transportation
IMPLEMENTATION APPROACH
1. Integrate with Putrajaya Mobile 2. To provide services or machine for coins exchange

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. PAPTT

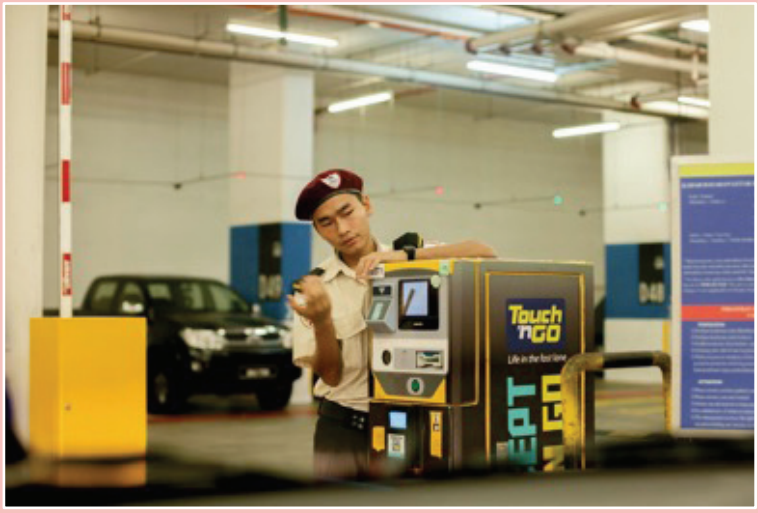
STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.2 : PARKING & BUS FARE PAYMENT SYSTEM

Smart Initiatives : Cashless bus fare payment system (e.g: e-wallet)
Objective : Smart services for community in order to reduce the use of transportation mode

DESIRED OUTCOME
1. Maximize the convenience of use of public transportation
IMPLEMENTATION APPROACH
1. Integrate with Putrajaya Mobile

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. PAPTT

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.3 : TRAFFIC SYSTEM AND ROAD SAFETY

Smart Initiatives : Smart traffic light (advance traffic control system)
Objective : Alleviate traffic congestion and safety issues through effective planning and enforcement

DESIRED OUTCOME

1. Continuous traffic flow for emergency vehicles
2. Improve emergency respond time

IMPLEMENTATION APPROACH

1. Upgrade to new version ITACA or new system
2. To add additional Smart CCTV

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Road Division

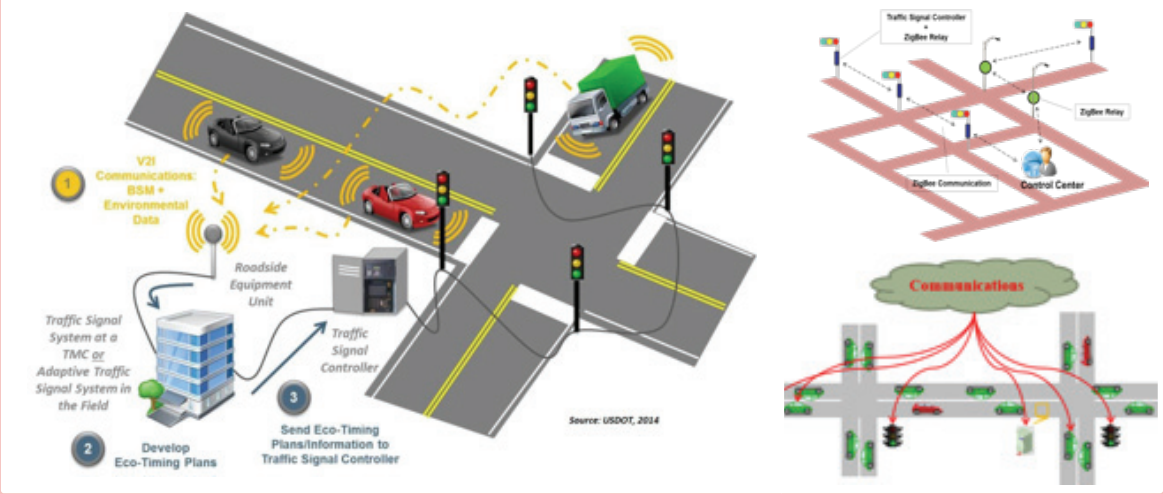
Agency

STATUS PROJECT

- Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.3 : TRAFFIC SYSTEM AND ROAD SAFETY

Smart Initiatives : Traffic calming
Objective : Alleviate traffic congestion and safety issues through effective planning and enforcement

DESIRED OUTCOME
1. Improve road safety 2. Reduce accident rate
IMPLEMENTATION APPROACH
1. Implementing manual traffic calming (quick win) 2. Increase awareness program

KEY PLAYERS

Internal Department

1. Smart City Division
2. Road Division
3. BPTKP

Agency

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.3 : TRAFFIC SYSTEM AND ROAD SAFETY

Smart Initiatives : Dedicated lane for all categories of vehicles
Objective : Alleviate traffic congestion and safety issues through effective planning and enforcement

DESIRED OUTCOME
1. Reduce public transport travel time and improve safety
IMPLEMENTATION APPROACH
1. Extended to other areas such as Persiaran Sultan Salehuddin (bus) and bicycle lane (core island)

KEY PLAYERS

Internal Department

1. Smart City Division
2. Road Division
3. BPTKP

Agency

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.3 : TRAFFIC SYSTEM AND ROAD SAFETY

Smart Initiatives : Traffic condition & safety monitoring (Smart CCTV)
Objective : Alleviate traffic congestion and safety issues through effective planning and enforcement

DESIRED OUTCOME
1. increase and enhance road effectiveness and efficiency
IMPLEMENTATION APPROACH
1. Monitoring traffic condition and safety

KEY PLAYERS

Internal Department

1. Smart City Division
2. Road Division
3. BTMK

Agency

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.4 : TRANSIT & TRAFFIC INFORMATION

Smart Initiatives : Multi-lingual bus arrival information
Objective : Facilitate public transportation information on availability and frequency of public transport in the city;

DESIRED OUTCOME

1. To achieve Modal Split 70:30 by maximizing the convenience of use of public transportation and general private transport user.

IMPLEMENTATION APPROACH

1. Integrated with bus provider by providing the digital board to display the bus arrival information
2. Create an application for public transportation in Putrajaya area

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. PAPTT

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.4 : TRANSIT & TRAFFIC INFORMATION

Smart Initiatives : Provide bus loading info using color coding
Objective : Facilitate public transportation information on availability and frequency of public transport in the city;

DESIRED OUTCOME

1. To achieve Modal Split 70:30 by maximizing the convenience of use of public transportation and general private transport user.

IMPLEMENTATION APPROACH

1. Bus loading information using different color coding such as:
   - Green (available seats)
   - Yellow (standing space)
   - Red (Limited Standing)

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. PAPTT

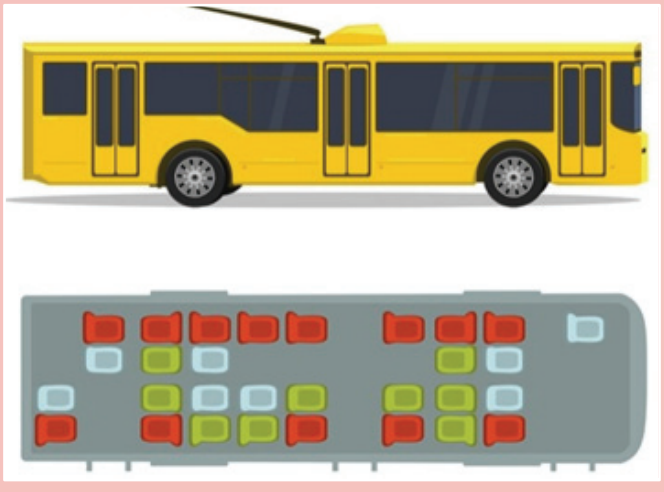
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.4 : TRANSIT & TRAFFIC INFORMATION

Smart Initiatives : Application to provide real-time information on public transport
Objective : Facilitate public transportation information on availability and frequency of public transport in the city;

DESIRED OUTCOME
1. To achieve Modal Split 70:30 by maximizing the convenience of use of public transportation and general private transport user.
IMPLEMENTATION APPROACH
1. Integrate with Putrajaya Mobile by providing the information to the users

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Road Division

Agency

1. PAPTT

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.4 : TRANSIT & TRAFFIC INFORMATION

Smart Initiatives : Variable message sign to display short traffic condition messages
Objective : Alleviate traffic congestion and safety issues through effective planning and enforcement

DESIRED OUTCOME
1. To achieve Modal Split 70:30 by maximizing the convenience of use of public transportation and general private transport user.
IMPLEMENTATION APPROACH
1. Identify the hotspot and blackspot area for speed sign

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Road Division

Agency

1. PAPTT

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.4 : TRANSIT & TRAFFIC INFORMATION

Smart Initiatives : Journey Planner
Objective : Alleviate traffic congestion and safety issues through effective planning and enforcement

DESIRED OUTCOME

1. To achieve Modal Split 70:30 by maximizing the convenience of use of public transportation and general private transport user.

IMPLEMENTATION APPROACH

1. SPEKTRA needs to be upgraded by NadiPutra (bus)
2. Putraja Mobile Apps must integrate with waze/ google maps

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Road Division
4. BPTKP

Agency

1. PAPTT

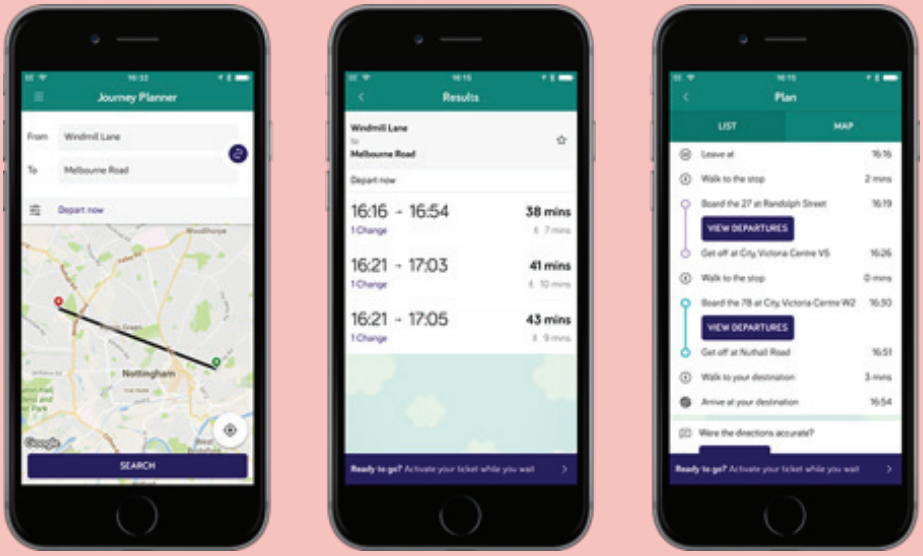
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.4 : TRANSIT & TRAFFIC INFORMATION

Smart Initiatives : Traffic count using smart CCTV
Objective : Facilitate public transportation' information on availability and frequency of public transport in the city

DESIRED OUTCOME
1. To achieve Modal Split 70:30 by maximizing the convenience of use of public transportation and general private transport user.
IMPLEMENTATION APPROACH
1. Combination with virtual sensor (radar)

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Road Division

Agency

1. PDRM

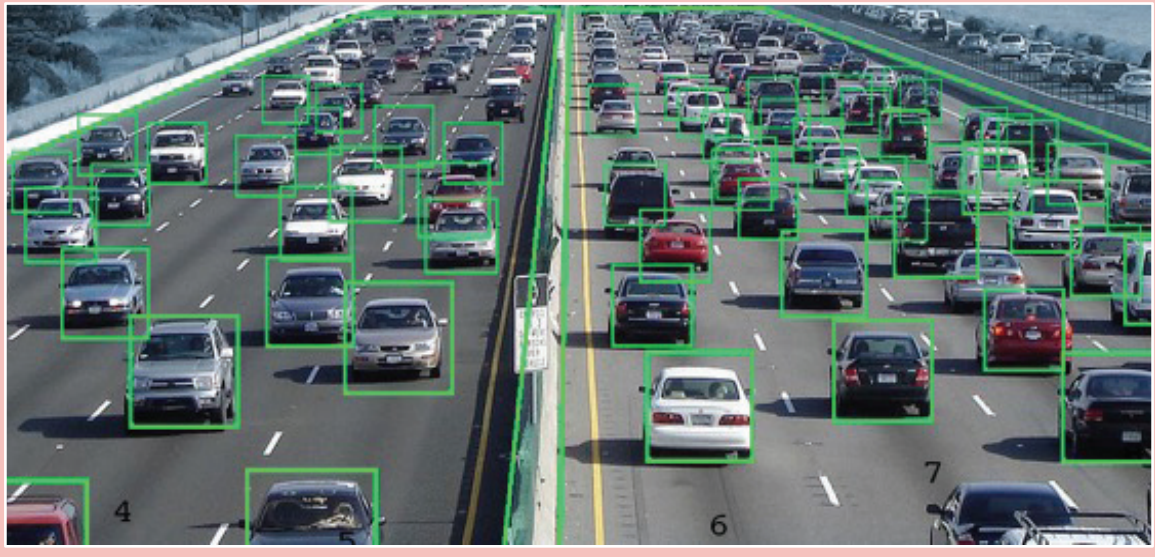
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.5 : SMART BUS STOPS

Smart Initiatives : Motion sensors (night time) for energy saving
Objective : Reduce carbon emissions and air pollution through the use of efficient modes of public transportation

DESIRED OUTCOME
1. Energy saving and reduction of carbon emissions
IMPLEMENTATION APPROACH
1. Sensor component need to be installed

KEY PLAYERS

Internal Department

1. Smart City Division
2. Road Division
3. BTMK

Agency

1. PAPTT
2. PDRM

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.5 : SMART BUS STOPS

Smart Initiatives : Sensor to monitor real time facility problem
Objective : Reduce carbon emissions and air pollution through the use of efficient modes of public transportation

DESIRED OUTCOME
1. Energy saving and reduction of carbon emissions
IMPLEMENTATION APPROACH
1. Sensor component need to be installed

KEY PLAYERS

Internal Department

1. Smart City Division
2. Road Division
3. BTMK

Agency

1. PAPTT
2. Private Companies

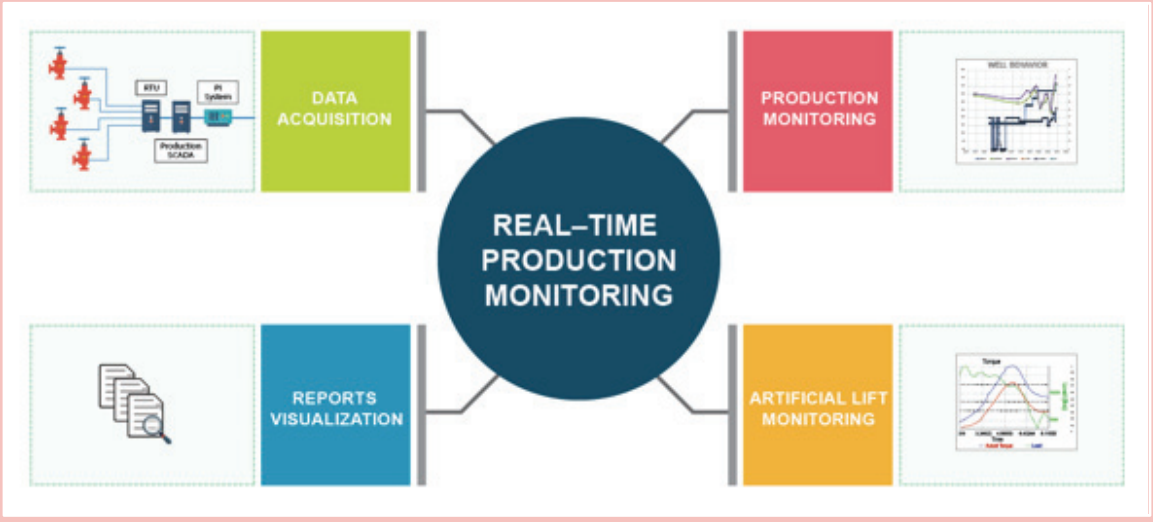
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.6 : LOW EMISSIONS TRANSPORTATION MODE

Smart Initiatives : Bike sharing facilities and services
Objective : Reduce carbon emissions and air pollution through the use of efficient modes of public transportation

DESIRED OUTCOME

1. Getting more people to cycle and not having to purchase their own bicycle

IMPLEMENTATION APPROACH

1. To increase more bike sharing services (preferable docked bike share system) through partnership
2. with private operators
3. Awareness program

KEY PLAYERS

Internal Department

1. BKPPP
2. Road Division
3. BPM

Agency

1. Private Bike Sharing Companies

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.6 : LOW EMISSIONS TRANSPORTATION MODE

Smart Initiatives : Ride sharing
Objective : Reduce carbon emissions and air pollution through the use of efficient modes of public transportation

DESIRED OUTCOME
1. Energy saving and reduction of carbon emissions
IMPLEMENTATION APPROACH
1. Incentive for people using public transportation by ride sharing

KEY PLAYERS

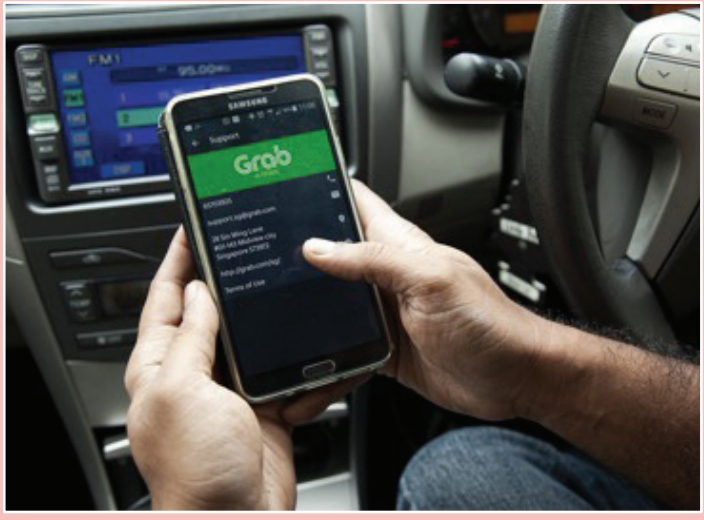
Internal Department	Agency
1. Smart City Division	1. Private Companies

STATUS PROJECT

- ✓ Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN → SHORT TERM → MEDIUM TERM → LONG TERM



Grab
MyCar
UBER

Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.6 : LOW EMISSIONS TRANSPORTATION MODE

Smart Initiatives : Eco Ride (tourists)
Objective : Reduce carbon emissions and air pollution through the use of efficient modes of public transportation

DESIRED OUTCOME

1. Energy saving and reduction of carbon emissions

IMPLEMENTATION APPROACH

1. Continuation of the service need to be reviewed

KEY PLAYERS

Internal Department

1. Smart City Division
2. BKPPP
3. Road Division

Agency

1. PAPTT
2. Private Companies

STATUS PROJECT

- ✓ Existing (to be expanded & enhanced)
- ○ Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.6 : LOW EMISSIONS TRANSPORTATION MODE

Smart Initiatives : NGV & EV Buses
Objective : Reduce carbon emissions and air pollution through the use of efficient modes of public transportation

DESIRED OUTCOME
1. Energy saving and reduction of carbon emissions
IMPLEMENTATION APPROACH
1. To increase the use of EV buses and NGV buses 2. Policy for electricity tariff for EV buses has to be put in place

KEY PLAYERS

Internal Department

1. Smart City Division
2. Road Division

Agency

1. PAPTT
2. Private Companies

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.6 : LOW EMISSIONS TRANSPORTATION MODE

Smart Initiatives : Improvement of bicycle lane and pedestrian walkways
Objective : Reduce carbon emissions and air pollution through the use of efficient modes of public transportation

DESIRED OUTCOME

1. Increase number of people walking & cycling
2. improve safety for users.

IMPLEMENTATION APPROACH

1. To improve safety features for pedestrian walkways and bicycle lane (kerb-cut treatment, signalize poles for bicycle, signalize system for pedestrian, and traffic signage)
2. To improve continuity (remove obstacles or realign walkways and bicycle lane)

KEY PLAYERS

Internal Department

1. BPM
2. Road Division

Agency

1. Ministry of Federal Territories

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.6 : LOW EMISSIONS TRANSPORTATION MODE

Smart Initiatives : Rail Based Transport
Objective : Alleviate traffic congestion and safety issues through effective planning and enforcement

DESIRED OUTCOME
1. Energy saving and reduction of carbon emissions
IMPLEMENTATION APPROACH
1. Review the extension of MRT 2. Review the implementation of Monorail/ LRT system (rail based)

KEY PLAYERS

Internal Department

1. Road Division
2. BPTKP

Agency

1. MOT
2. EPU
3. UKAS
4. Private Companies
5. Ministry of Federal Territories

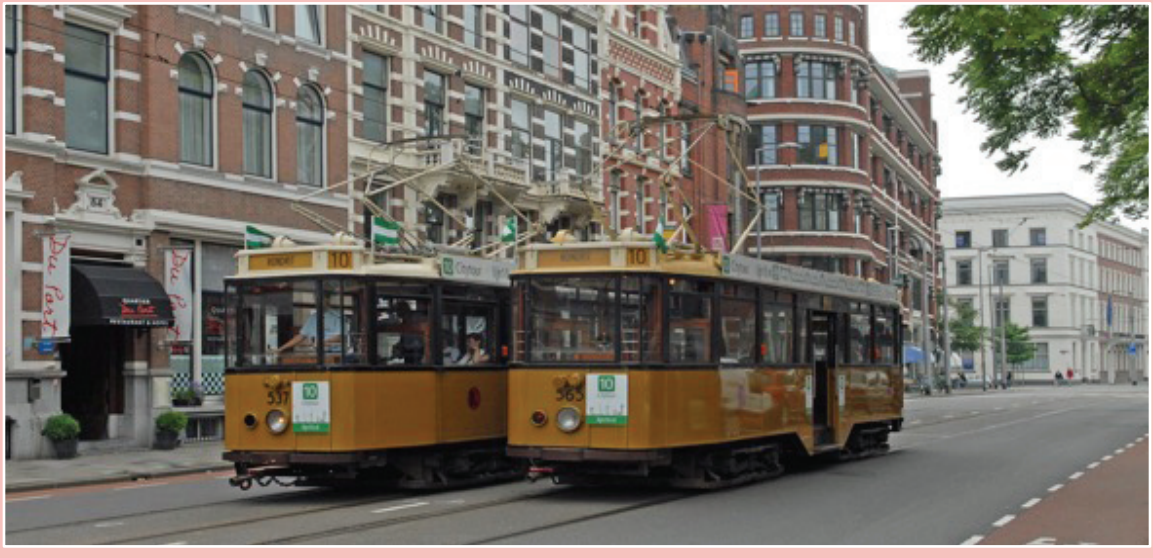
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 1 : SMART TRANSPORTATION AND MOBILITY
SMART APPLICATION 1.7 : NEW AGE VEHICLE

Smart Initiatives : Autonomous Vehicle
Objective : Reduce carbon emissions and air pollution through the use of efficient modes of public transportation

DESIRED OUTCOME

1. Provide people with alternative clean energy vehicular mode through autonomous vehicle

IMPLEMENTATION APPROACH

1. Policy and regulation
2. Encourage pilot project to implement in a short term

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. MOT
2. Private Companies

STATUS PROJECT

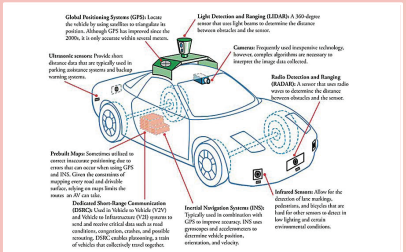
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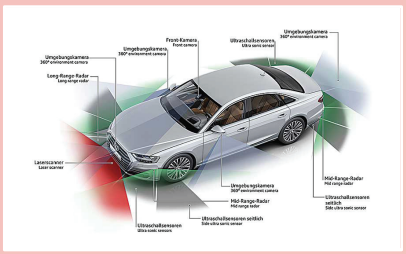
Future

TIMELINE

QUICK WIN → SHORT TERM → MEDIUM TERM → LONG TERM







Example Of Illustration & Best Practices

DOMAIN 2
SMART HOME AND ENVIRONMENT

SMART APPLICATION 2.1 : INTEGRATED ENVIRONMENT MONITORING SYSTEM

Smart Initiatives : Weather monitoring (temperature, rainfall, wind speed and humidity)
Objective : Ensuring that the environmental conditions of Putrajaya will be constantly monitored to allow for a high quality environment

DESIRED OUTCOME
1. Lake water pollution monitoring 2. Weather Monitoring 3. Air Quality Monitoring
IMPLEMENTATION APPROACH
1. Policy and regulation 2. Enforcement

KEY PLAYERS

Internal Department

1. Smart City Division
2. BASTW

Agency

1. MESTECC
2. Ministry of Federal Territories
3. Private Companies

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.1 : INTEGRATED ENVIRONMENT MONITORING SYSTEM

Smart Initiatives : Air quality monitoring
Objective : Ensuring that the environmental conditions of Putrajaya will be constantly monitored to allow for a high quality environment

DESIRED OUTCOME

1. Air Quality Monitoring

IMPLEMENTATION APPROACH

1. Pollution sensors are installed for monitoring of air quality and weather
2. Citizens can access info of 24 hour API value
3. The integrated air quality and weather reporting online

KEY PLAYERS

Internal Department

1. Smart City Division
2. BASTW

Agency

1. JAS

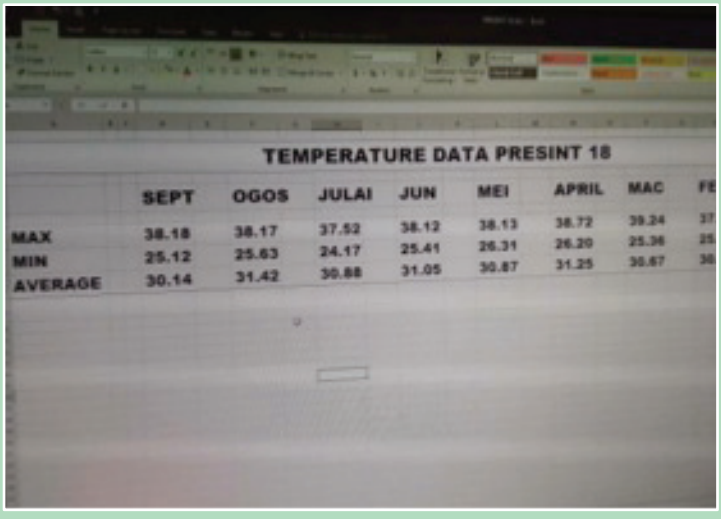
STATUS PROJECT

- ✓ Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





TEMPERATURE DATA PRESINT 18

	SEPT	OGOS	JULAI	JUN	MEI	APRIL	MAC
MAX	38.18	38.17	37.52	38.12	38.13	38.72	39.24
MIN	25.12	25.63	24.17	25.41	26.31	26.20	25.36
AVERAGE	30.14	31.42	30.88	31.05	30.87	31.25	30.87

Example Of Illustration & Best Practices

DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.1 : INTEGRATED ENVIRONMENT MONITORING SYSTEM

Smart Initiatives : Supervisory control and data acquisition (SCADA) for pollution prevention control
Objective : Ensuring that the environmental conditions of Putrajaya will be constantly monitored to allow for a high quality environment

DESIRED OUTCOME
1. Lake water pollution monitoring
IMPLEMENTATION APPROACH
1. Pollution sensors are installed for monitoring of lake water quality 2. Citizens can access info of 24 hour API value

KEY PLAYERS

Internal Department

1. Smart City Division
2. BASTW

Agency

1. Private Companies

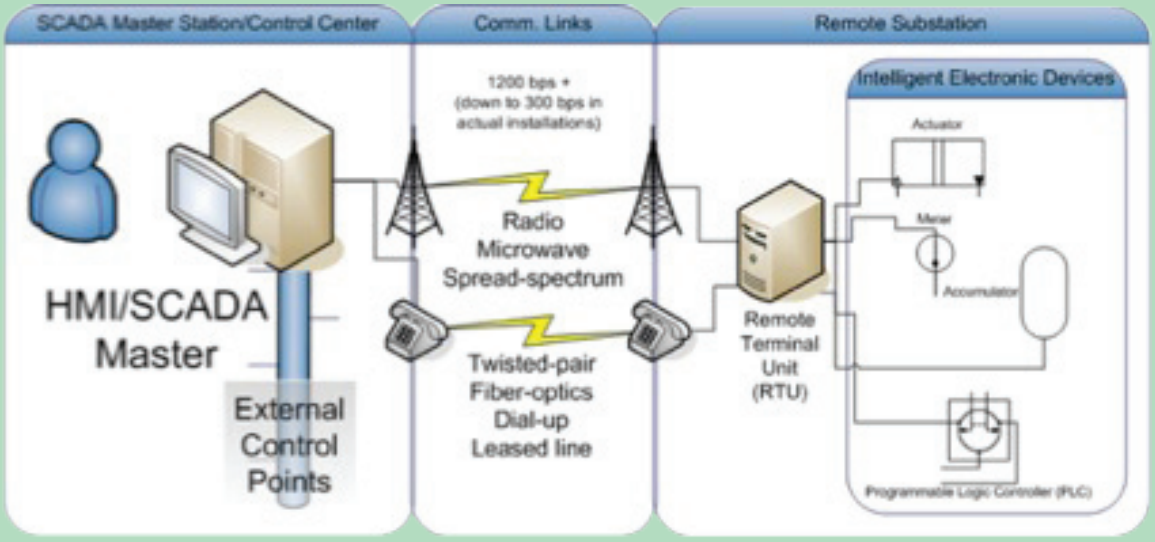
STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.1 : INTEGRATED ENVIRONMENT MONITORING SYSTEM

Smart Initiatives : Putrajaya lake and wetland management operational system (PLWMOS) – lake water quality, flora and fauna
Objective : Provide for effective and efficient water management to reduce wastage

DESIRED OUTCOME

1. Citizen can access the info through sensors in 24 hour
2. The integrated air quality, weather and lake water

IMPLEMENTATION APPROACH

1. Pollution sensors are installed for monitoring of air quality, weather and lake water
2. Citizens can access info of 24 hour API value
3. The integrated air quality and weather reporting online

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. Private Companies

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM

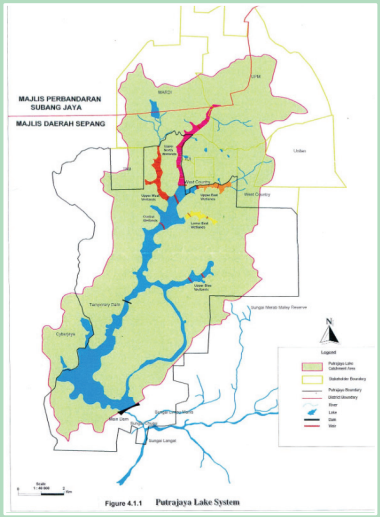
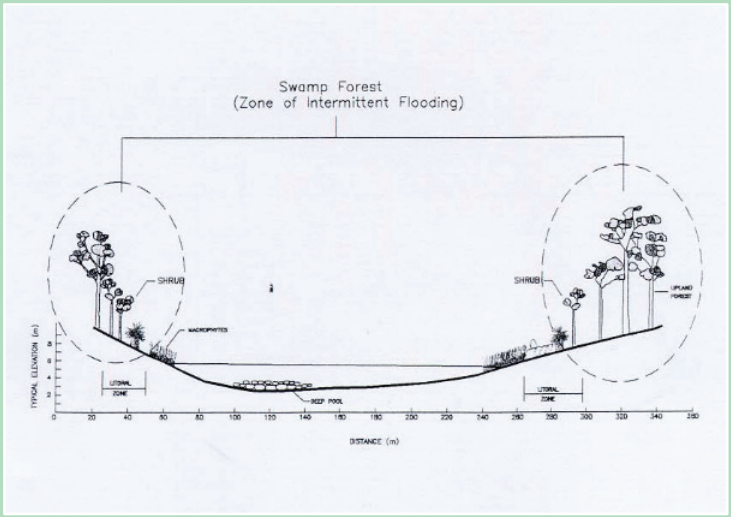


Figure 4.1.1 Putrajaya Lake System



Example Of Illustration & Best Practices

DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.2 : URBAN SUSTAINABILITY INDICATOR

Smart Initiatives : Malaysian Urban Rural (MURNInet) National Indicators Network for Sustainable Development
Objective : Ensuring that the environmental conditions of Putrajaya will be constantly monitored to allow for a high quality environment

DESIRED OUTCOME

1. Proposed the opportunities and improvement to achieve the sustainable development

IMPLEMENTATION APPROACH

1. Improve the sustainability of the cities

KEY PLAYERS

Internal Department

1. BPM

Agency

1. Ministry of Federal Territories
2. PLANMalaysia
3. Data Providers

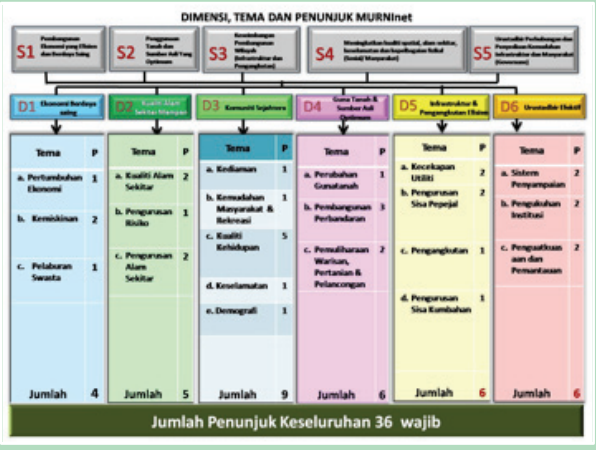
STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.3 : ENERGY USE & GHG EMISSIONS MONITORING

Smart Initiatives : Real time energy use monitoring for buildings (including solar PV performance)
Objective : Monitoring the energy use of buildings in the city so as to reduce consumption, and save on carbon emissions

DESIRED OUTCOME

1. Optimize the energy consumption within the building throughout change of behavior and use of technologies.

IMPLEMENTATION APPROACH

1. IoT installed in buildings and houses to provide real time energy consumption information to users and what measures can be taken to minimize utility bills through mobile apps

KEY PLAYERS

Internal Department

1. BPM
2. Facilities Management Division

Agency

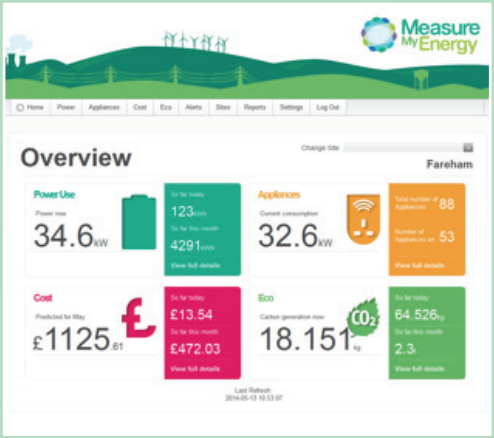
1. MESTECC
2. SEDA
3. JKR
4. Individual Building Owner

STATUS PROJECT

- ✓ Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.3 : ENERGY USE & GHG EMISSIONS MONITORING

Smart Initiatives : Green Energy
Objective : To mitigate the long term effects of climate change in relate to energy consumption.

DESIRED OUTCOME
1. To increase the usage of renewable and clean energy in the city.
IMPLEMENTATION APPROACH
1. Optimize and encouraging the use of renewable energy in buildings and transport.

KEY PLAYERS

Internal Department

1. BPM
2. Facilities Management Division
3. Road Division

Agency

1. MESTECC
2. SEDA
3. Individual Building Owner

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 2 : **SMART HOMES AND ENVIRONMENT**
SMART APPLICATION 2.3 : **ENERGY USE & GHG EMISSIONS MONITORING**

Smart Initiatives : Building Sector Energy Use & Carbon Reporting Programme ($BECO_2R$) for non-residential building (online system & apps)

Objective : Monitoring the energy use of buildings in the city so as to reduce consumption, and save on carbon emission

DESIRED OUTCOME
1. Monitor building performance online 2. Establish common metric at city level 3. Identifying further reduction potential through public disclosure
IMPLEMENTATION APPROACH
1. Reduce the carbon emission

KEY PLAYERS

Internal Department

1. BPM

Agency

1. MESTECC
2. MGTC
3. SEDA
4. Individual Building Owner

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM

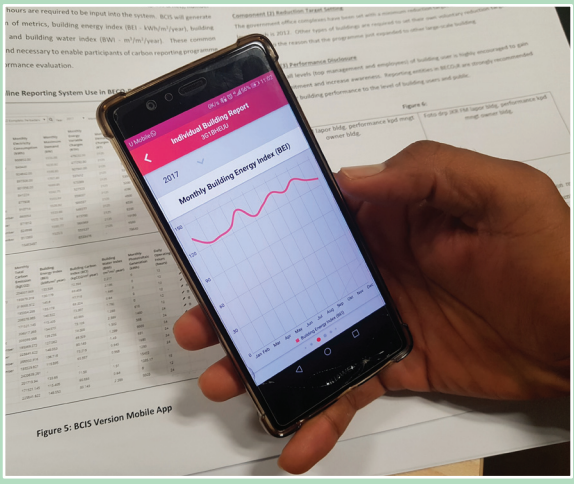
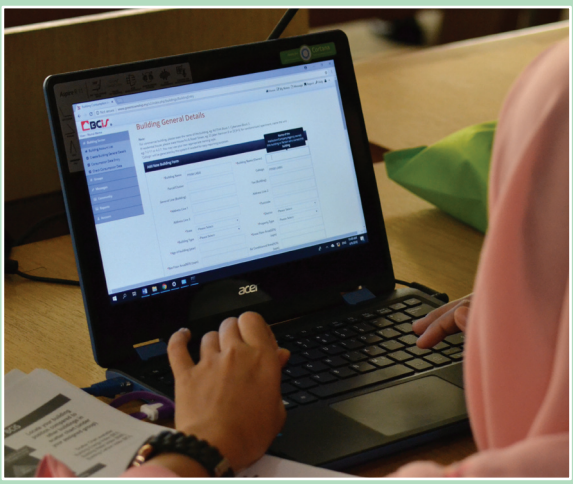


Figure 5: BCIS Version Mobile App



Example Of Illustration & Best Practices

DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.3 : ENERGY USE & GHG EMISSIONS MONITORING

Smart Initiatives : City scale GHG inventory system
Objective : Monitoring the GHG emissions in the city so as to reduce energy consumption and carbon emission.

DESIRED OUTCOME
1. Monitoring GHG emissions at city level for reduction measure review
IMPLEMENTATION APPROACH
1. Using GHG inventory calculator and reporting framework.

KEY PLAYERS

Internal Department
1. BPM

Agency
1. MESTECC

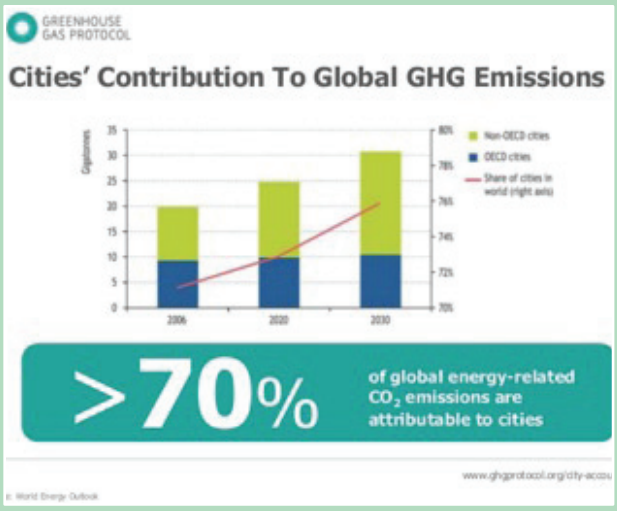
STATUS PROJECT

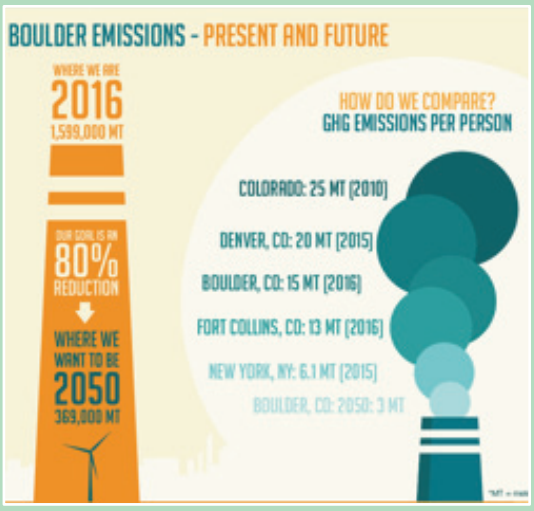
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.4 : WATER USE, SUPPLY & MONITORING

Smart Initiatives : Real time water use monitoring
Objective : Provide for effective and efficient water management to reduce wastage

DESIRED OUTCOME
1. Water efficiency message to the people by the water utility company
IMPLEMENTATION APPROACH
1. Setup the application

KEY PLAYERS

Internal Department

1. Smart City Division
2. BASTW

Agency

1. SYABAS
2. SPAN

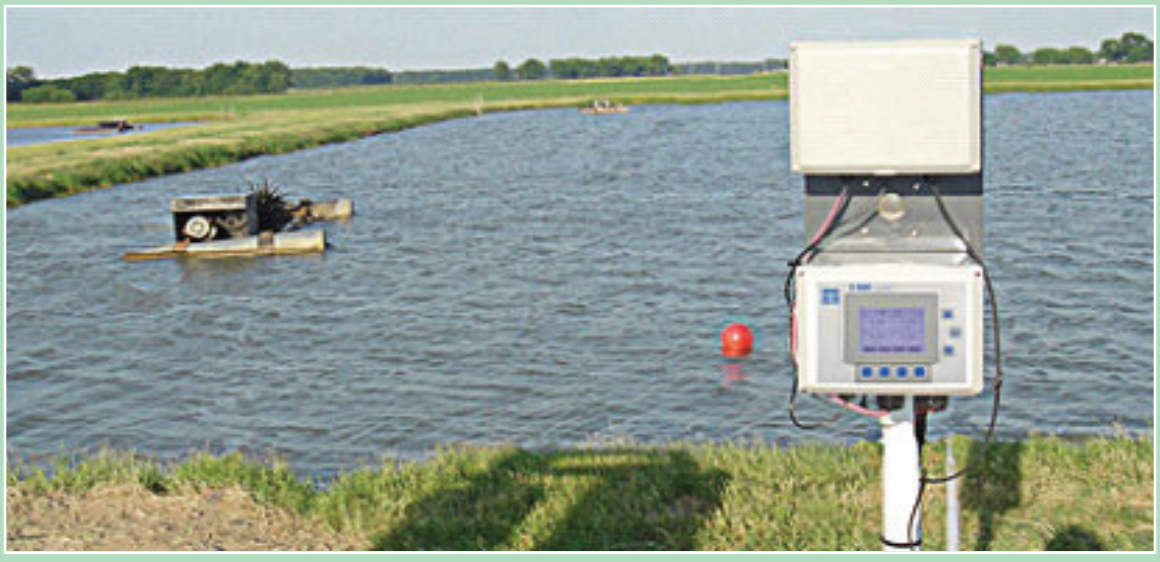
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



DOMAIN 2 : SMART HOMES AND ENVIRONMENT
SMART APPLICATION 2.5 : SMART HOME

Smart Initiatives : Create smart home for people
Objective : Monitoring the energy use of buildings in the city so as to reduce consumption, and save on carbon emission.

DESIRED OUTCOME

1. Providing a choice for residents to monitor their homes, to control the air condition, and electrical appliance remotely when not in home

IMPLEMENTATION APPROACH

1. Smart Home System (sensor, solar panel, smart acces card, wifi, phone coverage, smart TV, home watch by smartphone)
2. Smart Energy/ Green Initiative (solar panel, SPAH, invertor electrical appliances)
3. Creating a special zone to implement Smart Home concept in Percint 12, 15 and 19

KEY PLAYERS

Internal Department

1. Smart City Division
2. PPAM

Agency

1. Developers

STATUS PROJECT

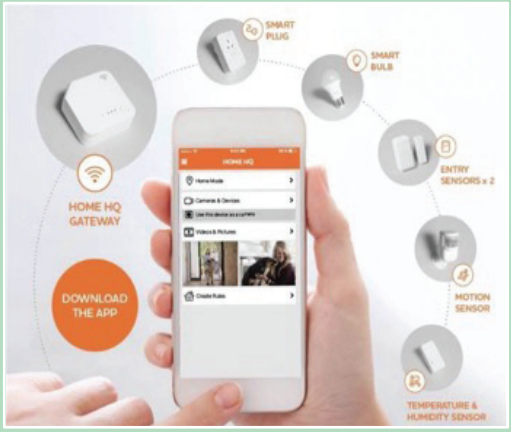
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 3
SMART GOVERNMENT SERVICE

SMART APPLICATION 3.1 : CITY MANAGEMENT AND MONITORING

Smart Initiatives : Putrajaya Command Centre
Objective : Provide the basic infrastructure to upgrade the city's capabilities and capacities towards a Smart City status

DESIRED OUTCOME
1. Provide safety to the people living in Putrajaya
IMPLEMENTATION APPROACH
1. Integrated centre that monitor the city 24hours on traffic , safety, disaster, crowd control etc 2. Express monitoring and advisory system such as vehicle recovery services which helps to detect accidents or any incidences

KEY PLAYERS

Internal Department

1. BTMK
2. Road Division
3. Enforcement Division
4. BASTW
5. Smart City Division

Agency

1. PDRM
2. BOMBA

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.2 : RESIDENTS AND PUBLIC COMMUNICATION

Smart Initiatives : Putrajaya Mobile Apps
Objective : Creates a more efficient management and maintenance regime;

DESIRED OUTCOME
1. Citizens are provided with information regarding public administration, processes of civil affair
IMPLEMENTATION APPROACH
1. Integrate with all the application in Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. Smart City Division
2. BKK
3. BTMK

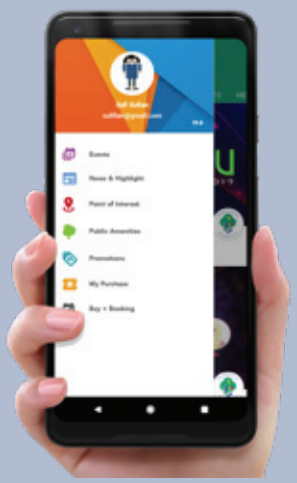
Agency

STATUS PROJECT

- Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.3 : PUBLIC INFORMATION DISPLAY SYSTEM

Smart Initiatives : Digital information boards at strategic areas for latest news/ events/ promotion
Objective : Creates a more efficient management and maintenance regime;

DESIRED OUTCOME
1. Citizens are aware of situation throughout the city in order to make decision on travel routes and other activities
IMPLEMENTATION APPROACH
1. Identify the selected area

KEY PLAYERS

Internal Department

1. Smart City Division
2. BKK
3. BTMK

Agency

1. Private Companies

STATUS PROJECT

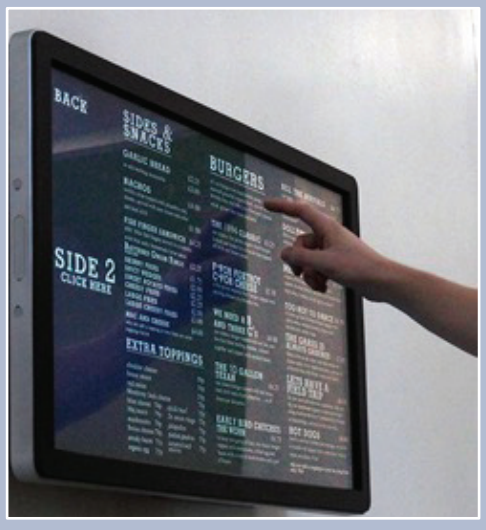
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.4 : E-GOVERNMENT SERVICES

Smart Initiatives : Digitalization of land inventory and cadastral data (land use governance)
Objective : Creates a more efficient management and maintenance regime;

DESIRED OUTCOME

1. Assist land owners, developers in obtaining information on the land availability and land information for development order.

IMPLEMENTATION APPROACH

1. Integrate with all the application in Putrajaya Mobile Apps
2. Provide the professional position in Putrajaya Corporation

KEY PLAYERS

Internal Department

1. BPTKP
2. BTMK
3. Smart City Division

Agency

1. JKPTG
2. PTGWP

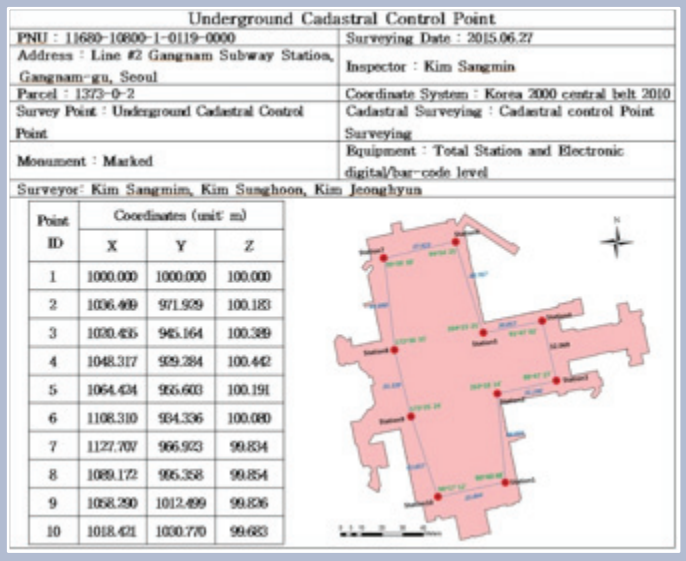
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM

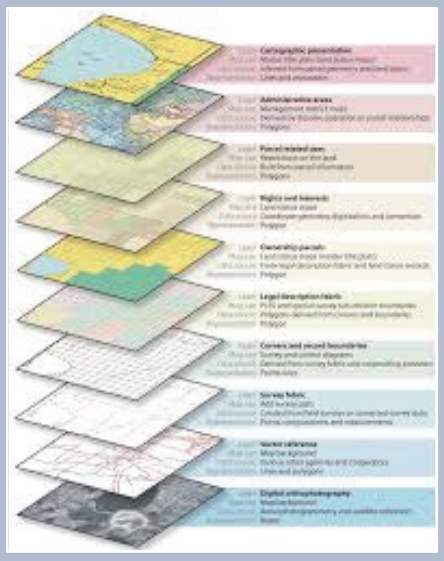


Underground Cadastral Control Point

PNU : 11680-10800-1-0119-0000	Surveying Date : 2015.06.27
Address : Line #2 Gangnam Subway Station, Gangnam-gu, Seoul	Inspector : Kim Sangmin
Parcel : 1373-0-2	Coordinate System : Korea 2000 central belt 2010
Survey Point : Underground Cadastral Control Point	Cadastral Surveying : Cadastral control Point Surveying
Monument : Marked	Equipment : Total Station and Electronic digital/bar-code level

Surveyor: Kim Sangmin, Kim Sunghoon, Kim Jeonghyun

Point ID	Coordinates (unit: m) X	Y	Z
1	1000.000	1000.000	100.000
2	1036.469	971.929	100.183
3	1030.456	945.164	100.389
4	1048.317	929.284	100.442
5	1064.434	955.603	100.191
6	1108.310	984.336	100.080
7	1127.707	966.923	99.834
8	1089.172	995.358	99.854
9	1058.290	1012.499	99.836
10	1018.421	1030.770	99.683



Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.4 : E-GOVERNMENT SERVICES

Smart Initiatives : Community data profiling
Objective : Provides the basis for a more vibrant economy

DESIRED OUTCOME
1. Create greater convenience for citizens, saving time, energy and resources
IMPLEMENTATION APPROACH
1. Gather all the data from related department 2. Provide a data base and system to keep all the data

KEY PLAYERS

Internal Department	Agency
1. BTMK 2. Community Service Division	1.Department of Statistics Malaysia

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM







Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.4 : E-GOVERNMENT SERVICES

Smart Initiatives : Electronic submission of development applications (OSC 3.0)
Objective : Creates a more efficient management and maintenance regime

DESIRED OUTCOME

1. Expedite development applications and increase efficiency in the monitoring of these application
2. Greater transparency

IMPLEMENTATION APPROACH

1. Provide the information regarding the status of application, developers, unit of building and etc

KEY PLAYERS

Internal Department

1. BTMK
2. BPTKP
3. Smart City Division

Agency

1. Developers
2. Consultants
3. Land Owners

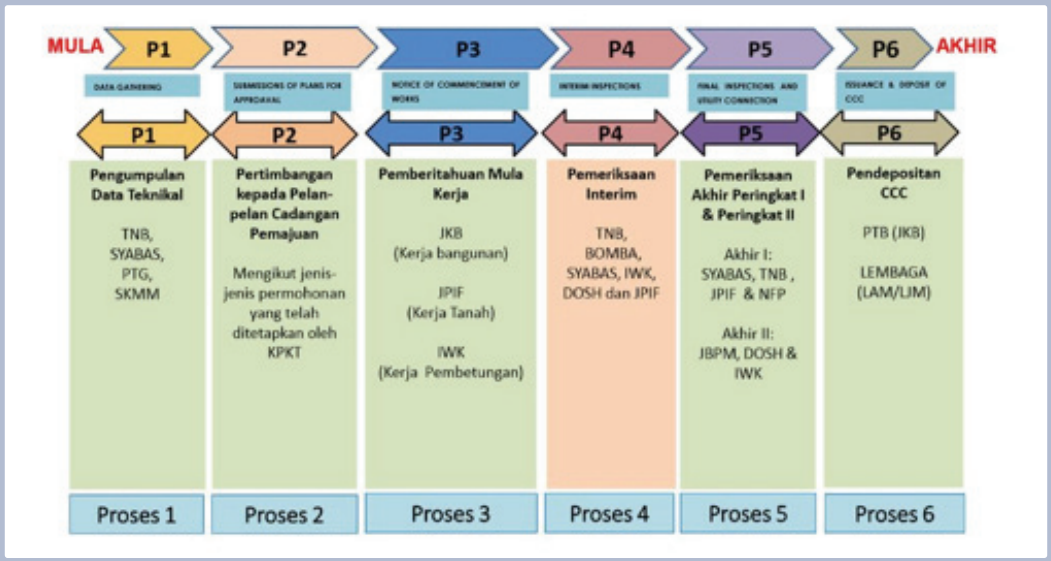
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.4 : E-GOVERNMENT SERVICES

Smart Initiatives : Complaints on line
Objective : Creates a more efficient management and maintenance regime

DESIRED OUTCOME
1. Create greater convenience for citizens, saving time, energy and resources
IMPLEMENTATION APPROACH
1. Creating link in a portal for complaints 2. Integrate with the Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. BKK
2. BTMK

Agency

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.4 : E-GOVERNMENT SERVICES

Smart Initiatives : Payment online/ application
Objective : Creates a more efficient management and maintenance regime

DESIRED OUTCOME

1. Create greater convenience for citizens, saving time, energy and resources

IMPLEMENTATION APPROACH

1. Creating link in a portal for complaints
2. Integrate with the Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. Smart City Division
2. Finance Division
3. BTMK

Agency

1. MOF

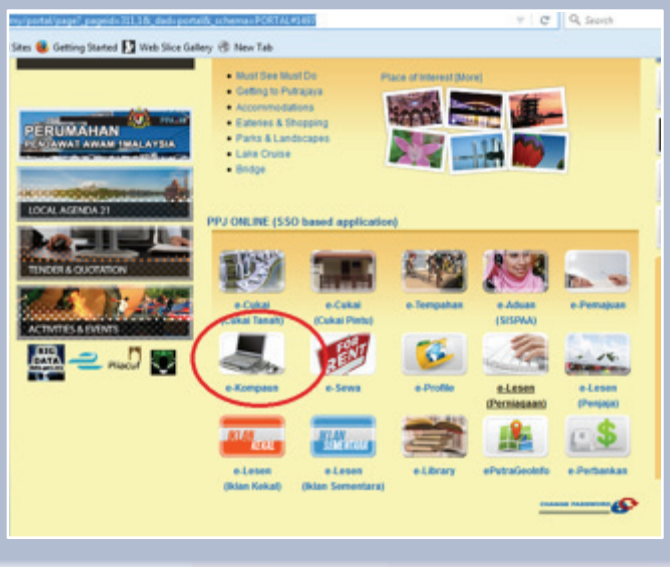
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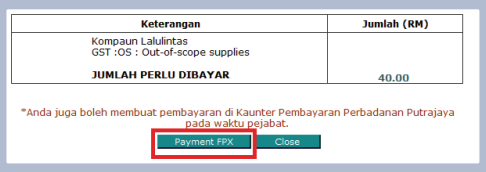
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM







Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.4 : E-GOVERNMENT SERVICES

Smart Initiatives : Online license application
Objective : Creates a more efficient management and maintenance regime

DESIRED OUTCOME
1. Create greater convenience for citizens, saving time, energy and resources
IMPLEMENTATION APPROACH
1. Creating link in a portal for complaints 2. Integrate with the Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. Smart City Division
2. BKPPP
3. BTMK

Agency

STATUS PROJECT

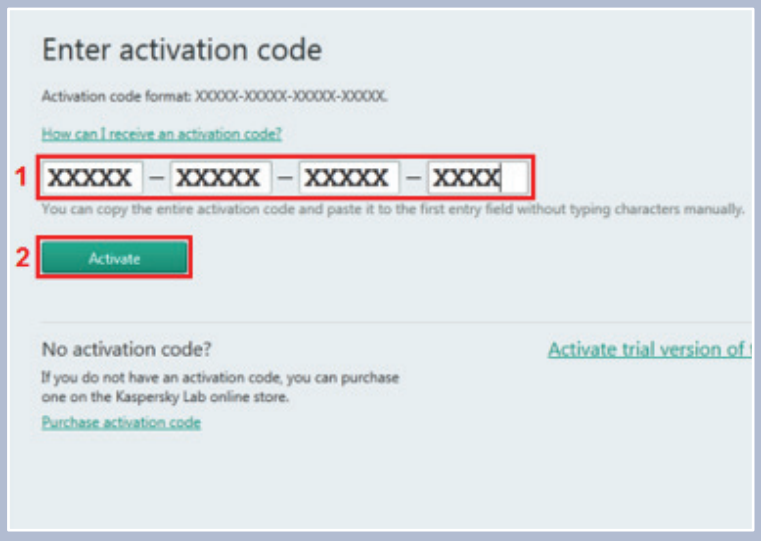
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.4 : E-GOVERNMENT SERVICES

Smart Initiatives : Online booking venues
Objective : Creates a more efficient management and maintenance regime

DESIRED OUTCOME
1. Create greater convenience for citizens, saving time, energy and resources
IMPLEMENTATION APPROACH
1. Creating link in a portal for complaints 2. Integrate with the Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Administration Division
4. Community Service Division

Agency

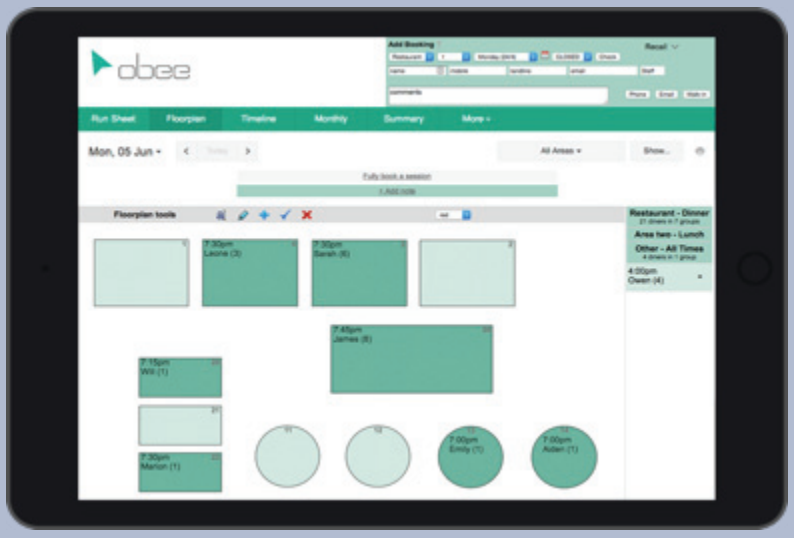
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 3 : SMART GOVERNMENT SERVICES
SMART APPLICATION 3.4 : E-GOVERNMENT SERVICES

Smart Initiatives : Online registration system (forum/ workshop/ training)
Objective : Creates a more efficient management and maintenance regime

DESIRED OUTCOME

1. Create greater convenience for citizens, saving time, energy and resources

IMPLEMENTATION APPROACH

1. To create a PJC online registration for all event
2. Creating link in a portal for complaints
3. Integrate with the Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Relevant internal Department

Agency

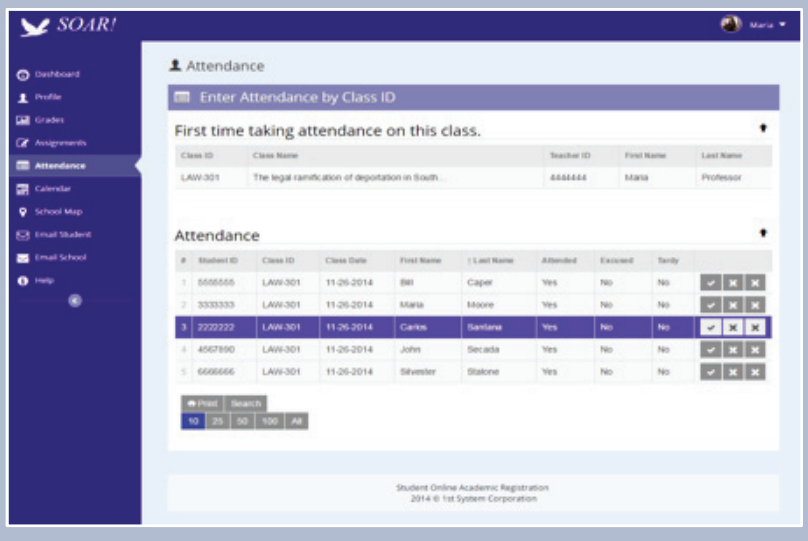
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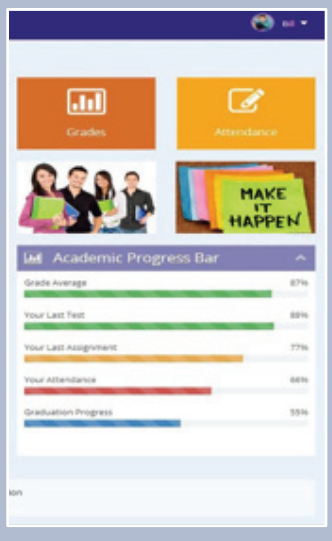
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 4
SMART INFRASTRUCTURE AND UTILITIES

SMART APPLICATION 4.1 : COMMUNICATION

Smart Initiatives : Centralized Radio Access (C-RAN)
Objective : Provide the basic infrastructure to upgrade the city's capabilities and capacities

DESIRED OUTCOME
1. Increase future wireless communication standards 2. Expand high speed mobile network sites in Putrajaya
IMPLEMENTATION APPROACH
1. Collaboration with TM and telcos

KEY PLAYERS

Internal Department
1. Smart City Division
2. BTMK

Agency
1. TM
2. Other telcos

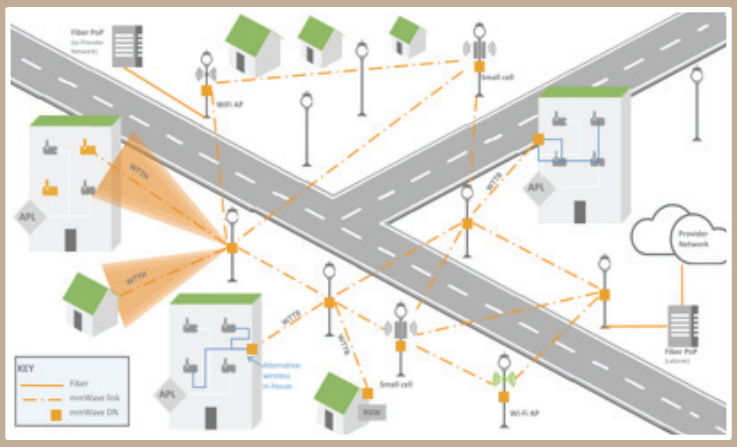
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.1 : COMMUNICATION

Smart Initiatives : Free Public Wi-Fi
Objective : Provide the basic infrastructure to upgrade the city's capabilities and capacities

DESIRED OUTCOME
1. Provide free communication capabilities for all citizens and visitors all throughout the city
IMPLEMENTATION APPROACH
1. Collaboration with TM

KEY PLAYERS

Internal Department	Agency
1. Smart City Division 2. BTMK	1. TM 2. Other telcos

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

● Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.1 : COMMUNICATION

Smart Initiatives : Wayside Equipment
Objective : Provide the basic infrastructure to upgrade the city's capabilities and capacities

DESIRED OUTCOME
1. Provide free communication capabilities for all citizens and visitors all throughout the city
IMPLEMENTATION APPROACH
1. Collaboration with developer, TM

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Road Division

Agency

1. Vendor

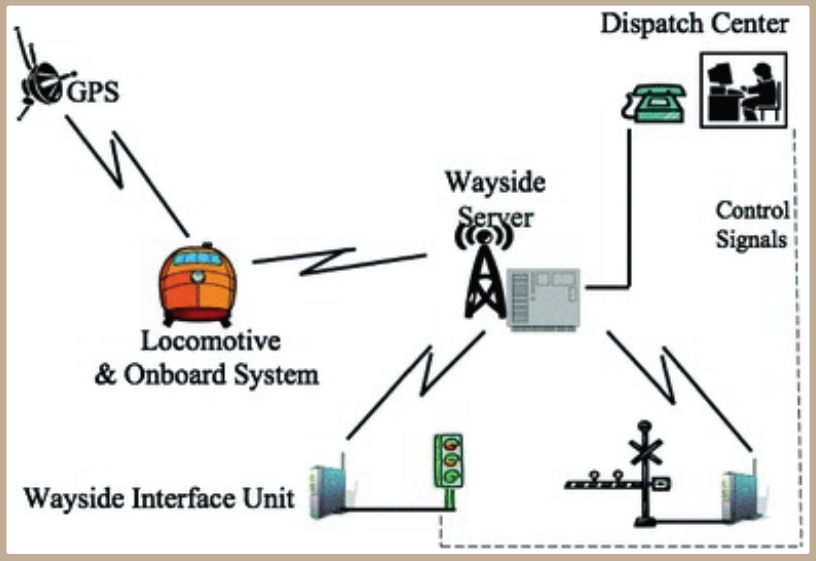
STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.1 : COMMUNICATION

Smart Initiatives : Fibre Cabling
Objective : Provide the basic infrastructure to upgrade the city's capabilities and capacities

DESIRED OUTCOME
1. Provide free communication capabilities for all citizens and visitors all throughout the city
IMPLEMENTATION APPROACH
1. Collaboration with developer, TM

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Road Division

Agency

1. Developer
2. TM
3. Qualified Professional

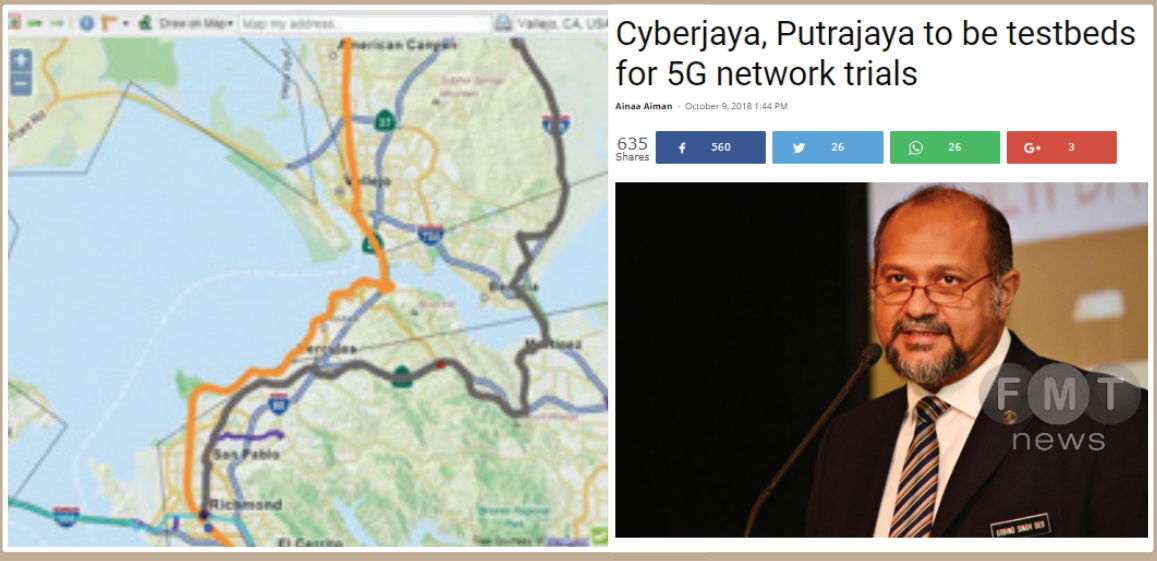
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.2 : STREET AND COMPOUND LIGHTING

Smart Initiatives : Energy saving street light
Objective : Saves costs for the city in the long term through better management of street lights

DESIRED OUTCOME
1. Create and maintain more energy efficiency public lightings
IMPLEMENTATION APPROACH
1. Encourage energy saving street light in every development application 2. Compulsory use of energy saving street light in public road 3. Make as requirement in the submission checklist.

KEY PLAYERS

Internal Department
1. Smart City Division
2. Road Division

Agency
1. Developer
2. Vendor
3. Private Companies

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.2 : STREET AND COMPOUND LIGHTING

Smart Initiatives : Energy saving compound light
Objective : Saves costs for the city in the long term through better management of street lights

DESIRED OUTCOME

1. Create and maintain more energy efficiency public lightings

IMPLEMENTATION APPROACH

1. Eourage energy saving compound light in every development application
2. Compulsory use of energy saving compound light at all public area.
3. Make as requirement in the submission checklist.

KEY PLAYERS

Internal Department

1. Road Division

Agency

1. Developer
2. Vendor
3. Private Companies

STATUS PROJECT

- ✓ Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.3 : FACILITIES MANAGEMENT

Smart Initiatives : Building Integrated Modelling (BIM)
Objective : Creates a more efficient building management through data base information;

DESIRED OUTCOME
1. Provide data and resources for all through professionals collaborate
IMPLEMENTATION APPROACH
1. Encourage developer or professional to use BIM applications 2. To install/develop BIM at PJC

KEY PLAYERS

Internal Department
1. Smart City Division
2. BSIB

Agency
1. Developer
2. Qualified Professional

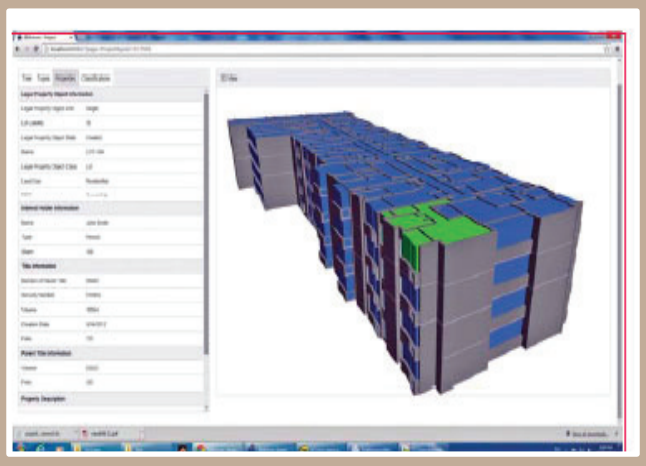
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.3 : FACILITIES MANAGEMENT

Smart Initiatives : City Lighting Management
Objective : Creates a more efficient management and maintenance regime;

DESIRED OUTCOME

1. To monitor all types of façade lighting and to ensure that the lighting is maintained as per Development Order (D.O) Approval and in line with Putrajaya Lighting Masterplan

IMPLEMENTATION APPROACH

1. To encourage the developer to apply city lighting management in their application
2. Compliance on the renewal of approval on façade lighting that follow the timeline and database creation for real-time status lighting monitoring

KEY PLAYERS

Internal Department

1. BPTKP
2. Road Division

Agency

1. JKR
2. Building owners / developers
3. BPH
4. Professional Agencies

STATUS PROJECT

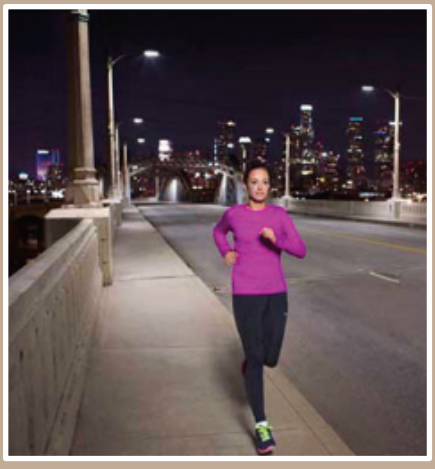
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.3 : FACILITIES MANAGEMENT

Smart Initiatives : Sensors for on-site facilities
Objective : Creates a more efficient management and maintenance regime;

DESIRED OUTCOME

1. The PCC can monitor the conditions and information will be sent to the responsible department/ agency for immediate repairs.

IMPLEMENTATION APPROACH

1. To upgrade the current facilities management to sensors on site facilities
2. To encourage new facilities to implement IoT leverages all the data from the sensors and systems in a facility

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. Utility provider

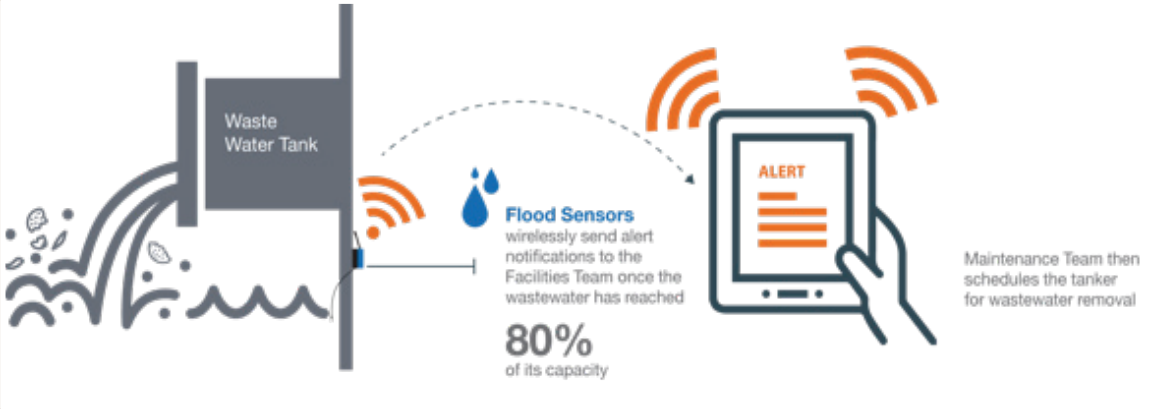
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.3 : FACILITIES MANAGEMENT

Smart Initiatives : Accessible facilities information (OKU)
Objective : Provide the basic infrastructure and facilities that are useable and accessible for all type of people

DESIRED OUTCOME

1. Provide information on location of facilities in the built environment and their wayfindings that are accessible to all including the disabled, the elderly and children.

IMPLEMENTATION APPROACH

1. To provide accessible facilities information (OKU) in the Apps and websites
2. To show the information in the signage

KEY PLAYERS

Internal Department

1. Smart City Division
2. BPTKP
3. BTMK
4. BSIB

Agency

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.4 : WASTE MANAGEMENT SYSTEM

Smart Initiatives : Sensors in garbage bins
Objective : Provide the basic infrastructure to upgrade the city's capabilities and capacities towards a Smart City status

DESIRED OUTCOME

1. Sensors in garbage bins send alerts when full to enable trucks to optimize their routes to prevent trips for empty bins.

IMPLEMENTATION APPROACH

1. To integrate with service provider and PJC
2. To install sensors in existing garbage bin

KEY PLAYERS

Internal Department

1. Smart City Division
2. Environmental Health Division

Agency

1. Alam flora
2. SWCorp
3. Private Companies

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.4 : WASTE MANAGEMENT SYSTEM

Smart Initiatives : GPS of garbage trucks
Objective : Saves costs for the city in the long term through better management of street lights and waste disposal.

DESIRED OUTCOME

1. Location of garbage trucks and efficiency of collection system

IMPLEMENTATION APPROACH

1. To integrate with service provider and PJC
2. Create a database that are integrated between the garbage bins sensor and the garbage trucks.

KEY PLAYERS

Internal Department

1. Smart City Division
2. Environmental Health Division

Agency

1. Alam flora
2. SWCorp
3. Private Companies

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 4 : SMART INFRASTRUCTURE AND UTILITIES
SMART APPLICATION 4.4 : WASTE MANAGEMENT SYSTEM

Smart Initiatives : Material Recovery Facility (MRF)
Objective : To effectively managing the waste disposal in the city area and reduce the quantity of waste sent to landfills.

DESIRED OUTCOME
1. Minimize the amount of waste that being sent to landfills
IMPLEMENTATION APPROACH
1. Compulsory of recycling waste from residential and commercial 2. To provide a MRF centre

KEY PLAYERS

Internal Department
1. Smart City Division
2. Environmental Health Division

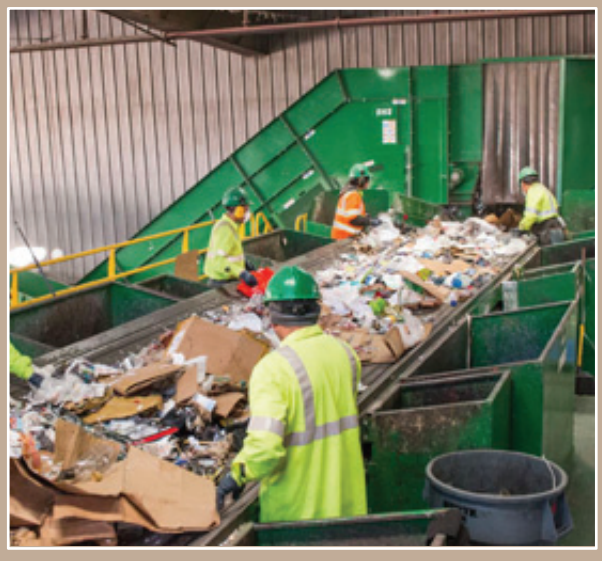
Agency
1. Alam flora
2. SWCorp

STATUS PROJECT

✓ Existing (to be expanded & enhanced)
Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 5
SMART SAFETY AND SECURITY

SMART APPLICATION 5.1 : EMERGENCY RESPONSE

Smart Initiatives : Panic Buttons
Objective : Provides for an emergency response system in times of emergencies or natural disasters.

DESIRED OUTCOME

1. Sound sensors and CCTV detect danger or urgent situation and CCTV's nearby automatically turn their angle to show the center of image of the situation

IMPLEMENTATION APPROACH

1. Integrate with the Putrajaya Mobile Apps
2. Provide panic button in hotspot and blackspot area (get data from PDRM)

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. BPM

Agency

1. PDRM
2. BOMBA
3. APM
4. Hospital Putrajaya

STATUS PROJECT

✓ Existing (to be expanded & enhanced)
Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.1 : EMERGENCY RESPONSE

Smart Initiatives : Putrajaya Command Centre
Objective : Provides the infrastructure for emergency situations

DESIRED OUTCOME
1. Image recognition function 2. Can monitor and detect any moving object or peoples by using the CCTV's that are installed around Putrajaya area.
IMPLEMENTATION APPROACH
1. Collaborate with related agencies

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. PDRM
2. BOMBA
3. APM
4. Hospital Putrajaya
5. JAWI
6. MKN

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.1 : EMERGENCY RESPONSE

Smart Initiatives : Communication Mode for OKU
Objective : Providing for an inclusive city that does not marginalize any groups in terms of communication needs

DESIRED OUTCOME
1. Inclusive city that caters to special needs of its citizen and visitors
IMPLEMENTATION APPROACH
1. People-Public-Private-Partnership

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. PDRM
2. BOMBA
3. APM
4. Hospital Putrajaya

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.2 : CRIME PREVENTION

Smart Initiatives : Smart CCTV (safety surveillance)
Objective : Provides for an emergency response system in times of emergencies or natural disasters

DESIRED OUTCOME
1. Image recognition function 2. Camera can monitor and detect any suspicious moving object or people within the monitoring area.
IMPLEMENTATION APPROACH
1. Collaborate with related agencies

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. BPM

Agency

1. PDRM
2. BOMBA
3. APM
4. Hospital Putrajaya

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | **SHORT TERM** | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.2 : CRIME PREVENTION

Smart Initiatives : License Plate Recognition System (LPRS)
Objective : Creating a platform for citizen's assurance on the safety and security levels of the city

DESIRED OUTCOME

1. Can monitor and detect every incoming and outgoing vehicles.
2. Recognition of plate number for safety purpose

IMPLEMENTATION APPROACH

1. Collaborate with external department
2. Digital signage by giving the warning

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. Enforcement Division

Agency

1. PDRM
2. BOMBA
3. APM
4. Hospital Putrajaya

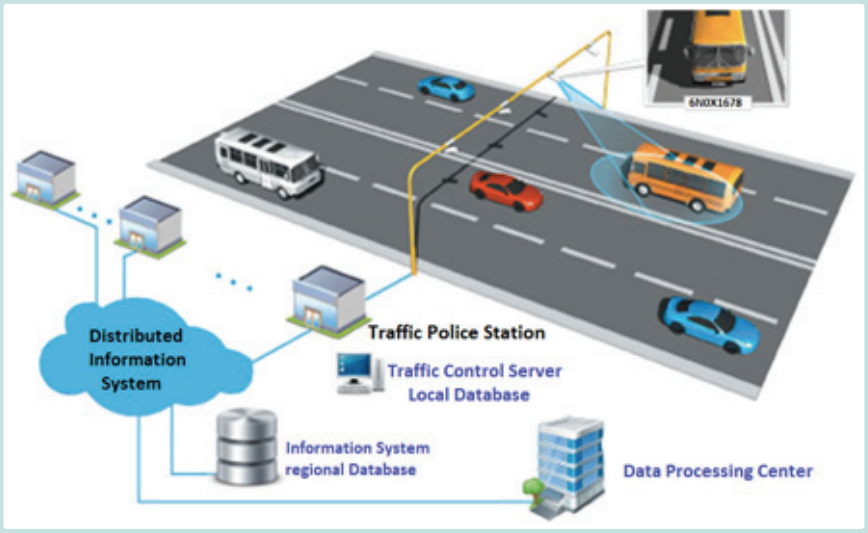
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.2 : CRIME PREVENTION

Smart Initiatives : Neighborhood Watch
Objective : Provides for an emergency response system in times of emergencies or natural disasters

DESIRED OUTCOME

1. Educating residents of a community on security and safety
2. Ensure the safeness and secure the neighborhood

IMPLEMENTATION APPROACH

1. People-Public-Private-Partnership
2. Collaborate with related agencies
3. Digital signage by giving the warning

KEY PLAYERS

Internal Department

1. Community Service Division
2. BPM

Agency

1. PDRM
2. BOMBA
3. AADK
4. JAWI
5. Hospital Putrajaya
6. MPP
7. JPNIN

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.3 : DISASTER PREVENTION

Smart Initiatives : Dam Integrity Assessment
Objective : Provides the infrastructure for emergency situations for the public

DESIRED OUTCOME

1. Protecting the critical assets such as land, lake and wetland.
2. Collect information in real time on emergencies such as flash flood, landslides, strong winds and etc

IMPLEMENTATION APPROACH

1. Monitoring the actual condition in the location that have potential experiencing disasters
2. Connecting and integrating with related agencies

KEY PLAYERS

Internal Department

1. Smart City Putrajaya
2. BTMK
3. BASTW

Agency

1. JPS
2. JKR
3. Malaysia Meteorological Department

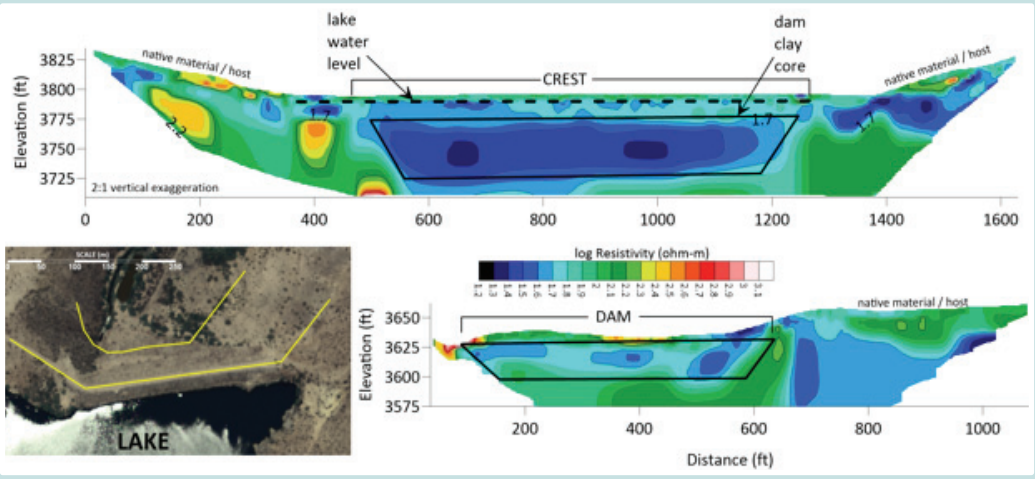
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.3 : DISASTER PREVENTION

Smart Initiatives : Possible disaster assessment
Objective : Creating a platform for citizen's assurance on the safety and security levels of the city

DESIRED OUTCOME

1. To protect the development and habitat from damage
2. Collect information in real time on emergencies such as flash flood, landslides, strong winds and etc

IMPLEMENTATION APPROACH

1. Monitoring the actual condition in the location that have potential experiencing disasters
2. Connecting and integrating with related agencies

KEY PLAYERS

Internal Department

1. BTMK
2. BASTW

Agency

1. PDRM
2. BOMBA
3. APM
4. Hospital Putrajaya

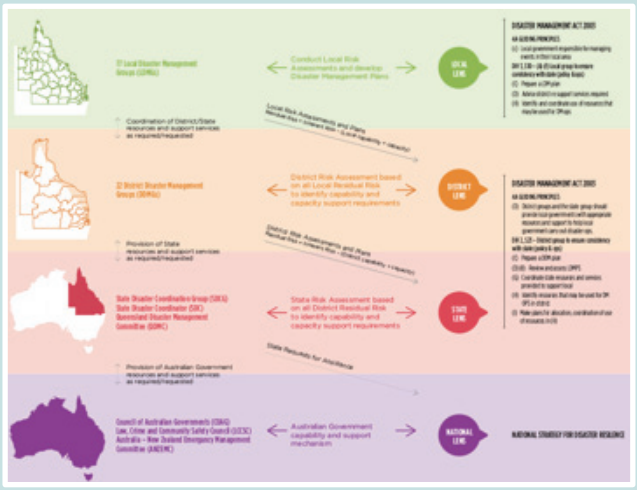
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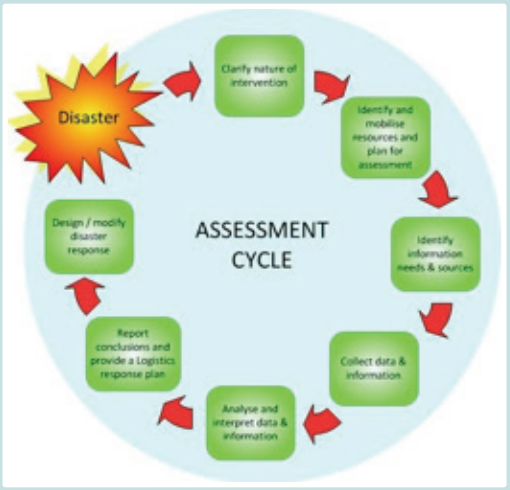
✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.4 : ROAD SAFETY

Smart Initiatives : Beat Automated Traffic Camera
Objective : Creating a platform for citizen's assurance on the safety and security levels of the city

DESIRED OUTCOME

1. Reduce road accident at traffic light junction

IMPLEMENTATION APPROACH

1. Integrated with Putrajaya City Comand Centre

KEY PLAYERS

Internal Department

1. Smart City Division
2. Enforcement Division
3. Road Division
4. BTMK

Agency

1. PDRM
2. JPJ

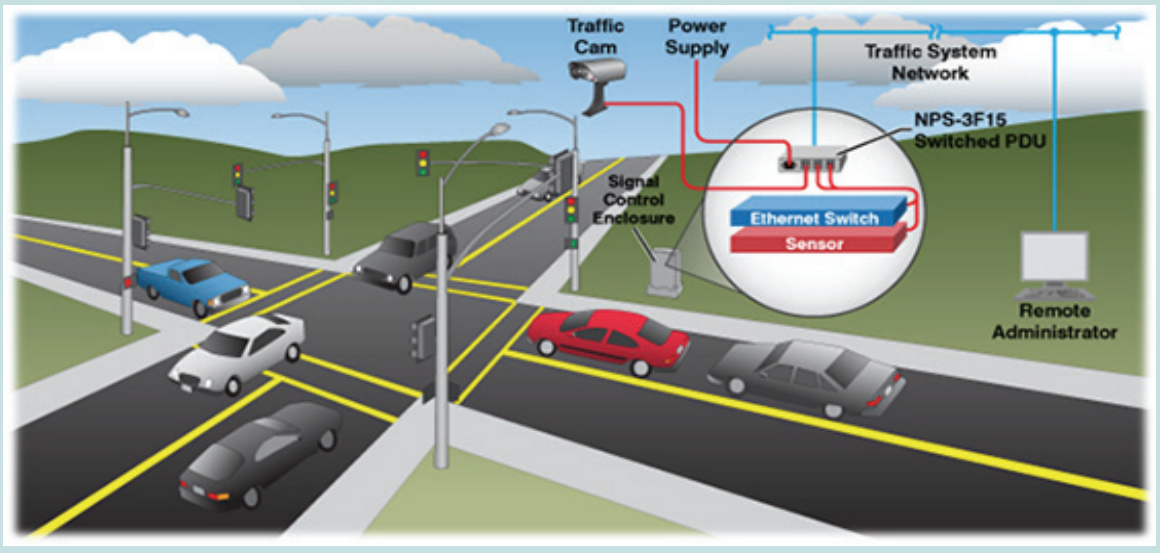
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 5 : SMART SAFETY AND SECURITY
SMART APPLICATION 5.4 : ROAD SAFETY

Smart Initiatives : Speed Awareness Design
Objective : Provides for an emergency response system in times of emergencies or natural disasters.

DESIRED OUTCOME

1. Improve road safety awareness

IMPLEMENTATION APPROACH

1. Integrated with Putrajaya Command Centre
2. Give compound to the traffic offender
3. Do campaign in promoting traffic safety awareness.

KEY PLAYERS

Internal Department

1. Smart City Division
2. Enforcement Division
3. Road Division
4. BTMK

Agency

1. PDRM
2. JPJ

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 6
SMART ECONOMY

SMART APPLICATION 6.1 : CASHLESS PAYMENT

Smart Initiatives : E-Wallet and E-Kiosk
Objective : Encourage the use of technology by introducing to the new way of shopping and businesses.

DESIRED OUTCOME
1. Citizens and visitors use online payment for most government services in Putrajaya
IMPLEMENTATION APPROACH
1. Integrated with Putrajaya Apps

KEY PLAYERS

Internal Department
1. Smart City Division
2. BTMK

Agency
1. Private Business Operator

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 6 : SMART ECONOMY
SMART APPLICATION 6.2 : TOURISM

Smart Initiatives : Smart application for city attraction (Putrajaya Mobile Apps)
Objective : Allowing for information dissemination in different economic activities of the city to encourage increased services and investments.

DESIRED OUTCOME
1. A smart application on all sites and attractions in the city with real-time information
IMPLEMENTATION APPROACH
1. Integrated with Putrajaya Mobile Apps

KEY PLAYERS

Internal Department
1. Smart City Division
2. BTMK
3. BKK

Agency
1. Private Business Operator

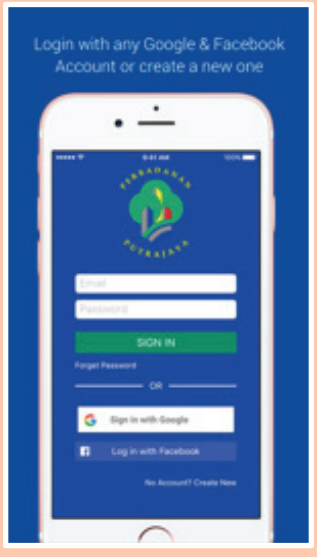
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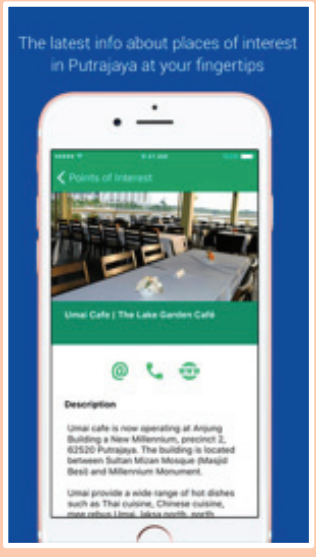
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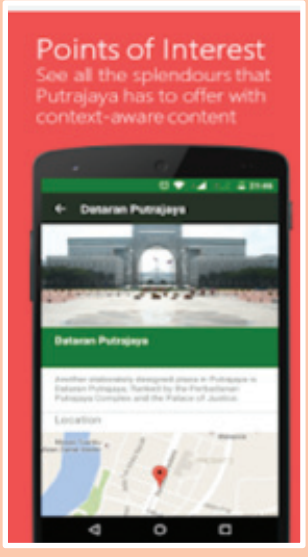
Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM







Example Of Illustration & Best Practices

DOMAIN 6: SMART ECONOMY
SMART APPLICATION 6.2 : TOURISM

Smart Initiatives : Real time data collection for tourists information
Objective : Allowing for information dissemination in tourism activities within the city to improve in term of investment and services

DESIRED OUTCOME

1. To assist in development, upgrading of tourism needs
2. Upgrading of tourism products and visitors needs.

IMPLEMENTATION APPROACH

1. Data collection via GPS, application and etc on actual numbers of tourists daily, monthly and annually to the cities.

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. BKK

Agency

1. Private Business Operator

STATUS PROJECT

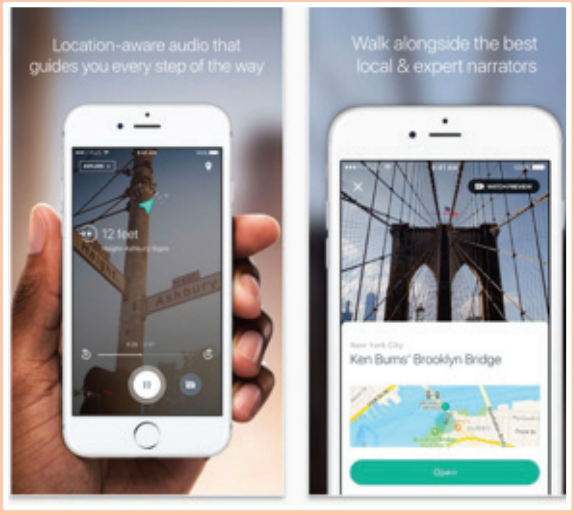
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 6 : SMART ECONOMY
SMART APPLICATION 6.2 : TOURISM

Smart Initiatives : Tourism feedback (visitors to rate the sites and services)
Objective : Allowing for information dissemination in different economic activities of the city to encourage increased services and investments.

DESIRED OUTCOME
1. A feedback application for visitors to rate the sites and services of tourism attractions in the city.
IMPLEMENTATION APPROACH
1. Create Apps platform for collecting data of tourist feedback that are integrate with Putrajaya Apps

KEY PLAYERS

Internal Department

1. BTMK
2. BKK
3. Smart City Division

Agency

1. Travel agency
2. MOTAC

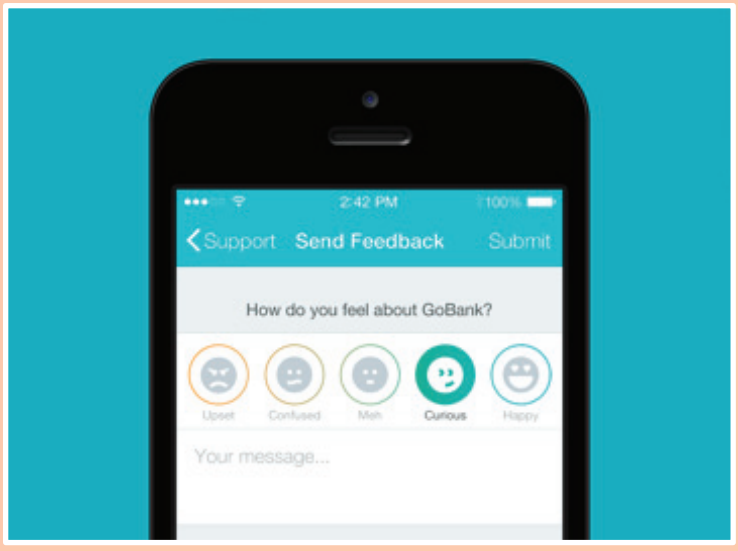
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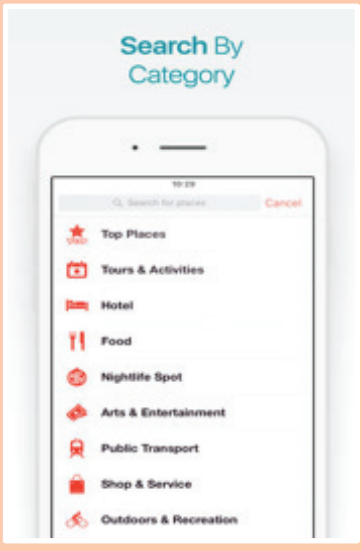
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 6 : SMART ECONOMY
SMART APPLICATION 6.3 : PROPERTY

Smart Initiatives : Smart application to view, sell and buy properties
Objective : Provide alternative platform for properties business within Putrajaya development

DESIRED OUTCOME

1. A special dedicated application on latest information of property developments available on market either approve, under construction or newly launch and etc.

IMPLEMENTATION APPROACH

1. Integrated with Putrajaya Mobile Apps
2. Provide the information of property availability, real time information on transaction prices

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. Private Business Operator
2. PJH

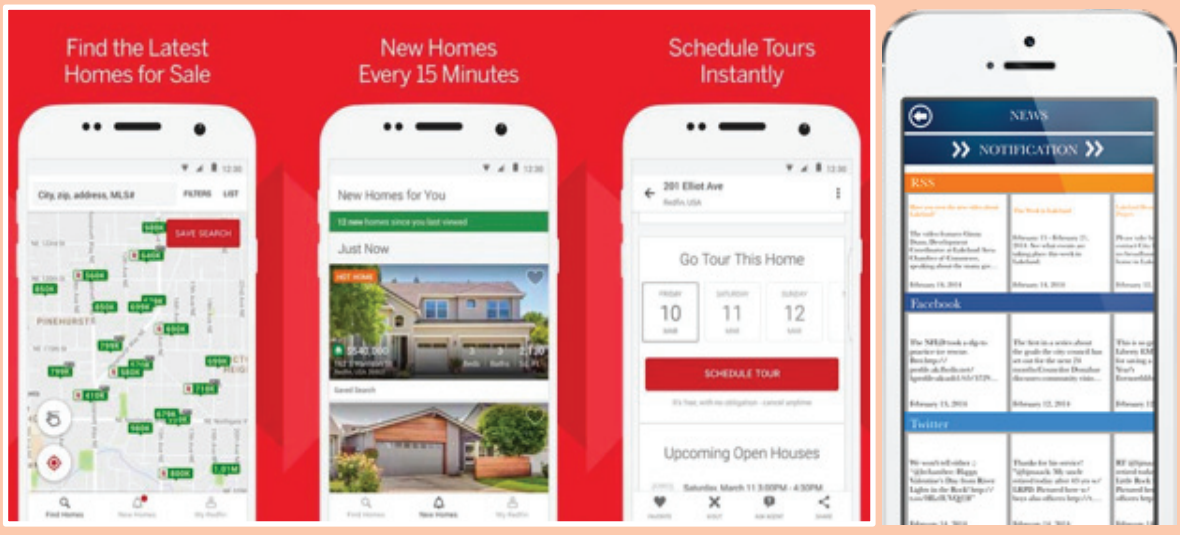
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 6 : SMART ECONOMY
SMART APPLICATION 6.4 : BUSINESS PROMOTION & ADVERTISEMENT

Smart Initiatives : Digital Billboards
Objective : Allowing for information dissemination in different economic activities of the city to encourage increased services and investments.

DESIRED OUTCOME
1. To control from central location to blast out advertisements to digital billboards
IMPLEMENTATION APPROACH
1. People-Public-Private-Partnership 2. Identify the strategic location to place the digital board

KEY PLAYERS

Internal Department

1. Smart City Division
2. BKPPP
3. BKK

Agency

1. Private Business Operator

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 6 : SMART ECONOMY
SMART APPLICATION 6.4 : BUSINESS PROMOTION & ADVERTISEMENT

Smart Initiatives : Smart application for business promotion (Putrajaya Mobile Apps)
Objective : Provide for an attractive city platform to encourage new ways of doing businesses;

DESIRED OUTCOME

1. A smart apps that contain the real time relate to business promotion in Putrajaya.

IMPLEMENTATION APPROACH

1. Integrated with Putrajaya Mobile Apps
2. Provide information of vendors and businesses that link with Putrajaya Corporation Portal

KEY PLAYERS

Internal Department

1. Smart City Division
2. BKK

Agency

1. Private Business Operator

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 6 : SMART ECONOMY
SMART APPLICATION 6.4 : BUSINESS PROMOTION & ADVERTISEMENT

Smart Initiatives : Digital Free Trade Zone (DFTZ) in Putrajaya
Objective : Provide for an attractive city platform to encourage new ways of doing businesses;

DESIRED OUTCOME
1. Provide incentives and encourage adoption of technology by business community
IMPLEMENTATION APPROACH
1. To identify a Digital Free Trade Zone in Putrajaya

KEY PLAYERS

Internal Department
1. Smart City Division
2. BTMK
3. BKK

Agency
1. Private Business Operator

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 6 : SMART ECONOMY
SMART APPLICATION 6.4 : BUSINESS PROMOTION & ADVERTISEMENT

Smart Initiatives : Set up incubator/ lab as to encourage business community to adopt technology
Objective : Provide for an attractive city platform to encourage new ways of doing businesses

DESIRED OUTCOME

1. To accelerate and facilitate the development of business apps.

IMPLEMENTATION APPROACH

1. People Public Private Partnership
2. Create and introduce a Community Training Center

KEY PLAYERS

Internal Department

1. Smart City Division

Agency

1. Private Business Operator

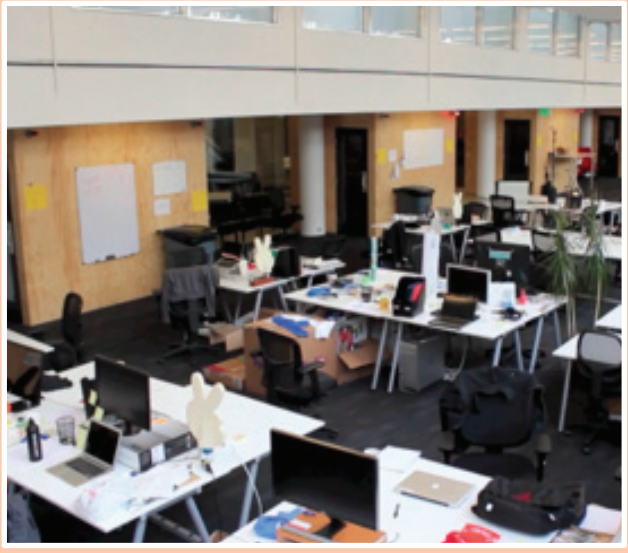
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 7
SMART COMMUNITY

SMART APPLICATION 7.1 : SMART EDUCATION

Smart Initiatives : Awareness program
Objective : Providing opportunities for citizens to provide feedback and suggestions to address issues as well as develop new opportunities for themselves;

DESIRED OUTCOME
1. Educate the community from all range of age on matters of environmental and etc
IMPLEMENTATION APPROACH
1. Collaborate with NGO's and professional organisation

KEY PLAYERS

Internal Department	Agency
1. Smart City Division	1. MPP
2. BTMK	2. BPH

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

● Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.1 : SMART EDUCATION

Smart Initiatives : Digital Library
Objective : Enabling the infrastructure to build up a smart community towards sustainability;

DESIRED OUTCOME

1. Creating platform to re-connect with others
2. Face to face engagements as well as cross discipline engagements
3. Provide interactive displays on all subjects

IMPLEMENTATION APPROACH

1. Upgrading existing library
2. To Integrate library system

KEY PLAYERS

Internal Department

1. Smart City Division
2. Community Service Division
3. BTMK

Agency

1. PNM
2. KPM
3. Yayasan Al-Bukhari

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.1 : SMART EDUCATION

Smart Initiatives : On-line school admission
Objective : To insure the effectiveness for students registration

DESIRED OUTCOME

1. Easier for parents to do the registration
2. Save time (time-effectiveness)
3. Efficiency

IMPLEMENTATION APPROACH

1. Partner with education department to provide online registration for all school
2. Provide online registration for kindergartens, child care center and etc.

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. MOE
2. JKM
3. JPWP
4. KPM

STATUS PROJECT

- Existing (to be expanded & enhanced)
- Future

TIMELINE

QUICK WIN → SHORT TERM → MEDIUM TERM → LONG TERM



Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.1 : SMART EDUCATION

Smart Initiatives : Digital Classroom
Objective : Provide students with more flexibility through a self-directed approach to learning.

DESIRED OUTCOME

1. Transform traditional classrooms into digital classrooms.
2. Integrating technology into learning process in the classroom. The computer in schools.
3. Turning students as creators of knowledge instead being knowledge recipients.

IMPLEMENTATION APPROACH

1. Need to develop infrastructure in schools (internet bandwidth, provide devices such as tablet and interactive white board or smart board in classrooms).
2. Ministry of Education (MOE) has to identify technology partners to implement the smart education solutions.

KEY PLAYERS

Internal Department

1. Smart City Division

Agency

1. MOE
2. JPWP
3. Technology Partner (Microsoft Malaysia)

STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.2 : INNOVATIVE COMMUNITY

Smart Initiatives : Innovative Center (POINT)
Objective : Enabling the infrastructure to build up a smart community towards sustainability;

DESIRED OUTCOME
1. Operate, serve and grow innovative through the innovative center
IMPLEMENTATION APPROACH
1. Create a tech-community in Putrajaya

KEY PLAYERS

Internal Department
1. Smart City Division
2. BTMK
3. BPM

Agency
1. MCMC
2. MOE

STATUS PROJECT

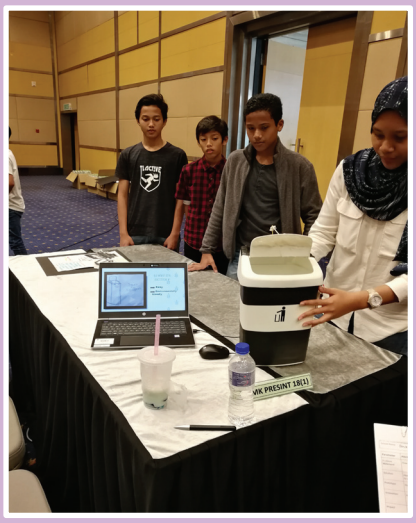
✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM





Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.2 : INNOVATIVE COMMUNITY

Smart Initiatives : Children–led climate change adaptive programme
Objective : Expose and educate young children on the climate change and enhance their creative ideas.

DESIRED OUTCOME
1. Enrich the young students with scientific knowledge infused together with values of green living, while instilling sense of responsibility and care for the environment
IMPLEMENTATION APPROACH
1. Collaborate with NGO's and Educational Institution

KEY PLAYERS

Internal Department

1. BPM

Agency

1. University
2. Schools
3. NGO's

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.3 : HEALTHCARE MONITORING PROGRAM

Smart Initiatives : Tele Health Services
Objective : Enabling the infrastructure to build up a smart community towards sustainability;

DESIRED OUTCOME
1. Providing an application for citizen that include: • Immediate help or action for emergency cases such as collapse, fainting etc • Immediate link for emergency information
IMPLEMENTATION APPROACH
1. To integrate with PJC Apps and PCC

KEY PLAYERS

Internal Department
1. Smart City Division
2. BTMK

Agency
1. KKM

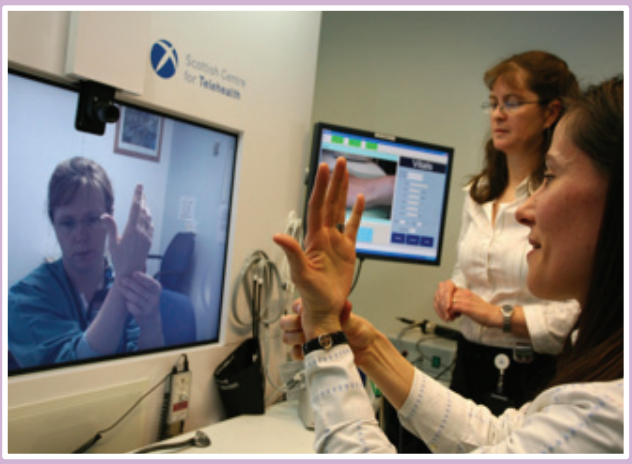
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.3 : HEALTHCARE MONITORING PROGRAM

Smart Initiatives : Real time information of health and risk area
Objective : Enabling the infrastructure to build up a smart community towards sustainability;

DESIRED OUTCOME
1. To inform citizens on areas of disease outbreaks such as dengue
IMPLEMENTATION APPROACH
1. Partnering with the Health Department 2. Digital mapping of the risk area using GPS.and Geo-Spatial Information

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

1. KKM

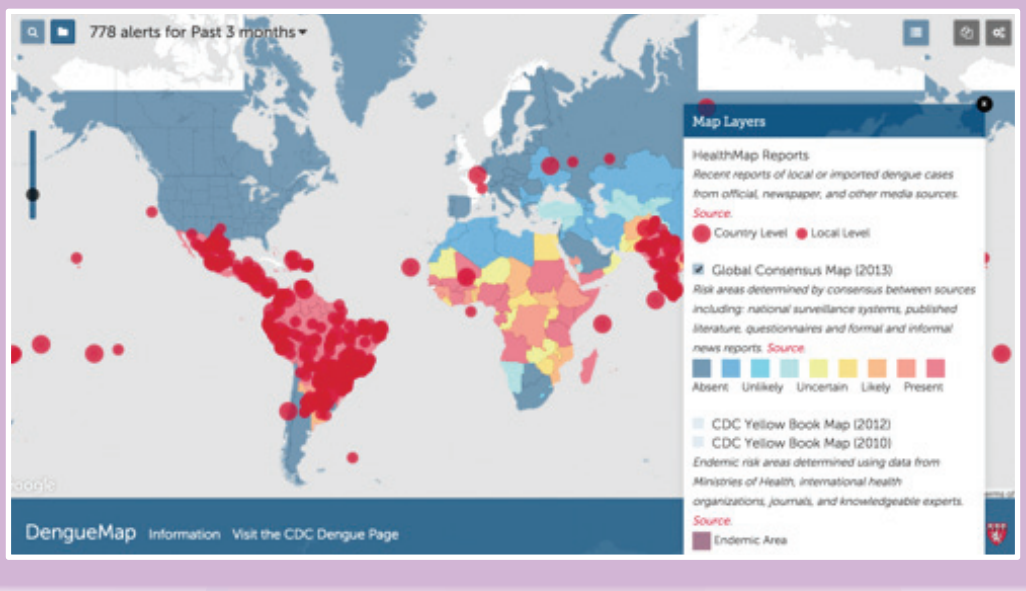
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.3 : HEALTHCARE MONITORING PROGRAM

Smart Initiatives : Healthy diet information and education
Objective : Spread information and awareness through digital technologies

DESIRED OUTCOME

1. Easy access to the information of health and food nutrition.

IMPLEMENTATION APPROACH

1. Intergrade apps MyNutri Apps and Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK

Agency

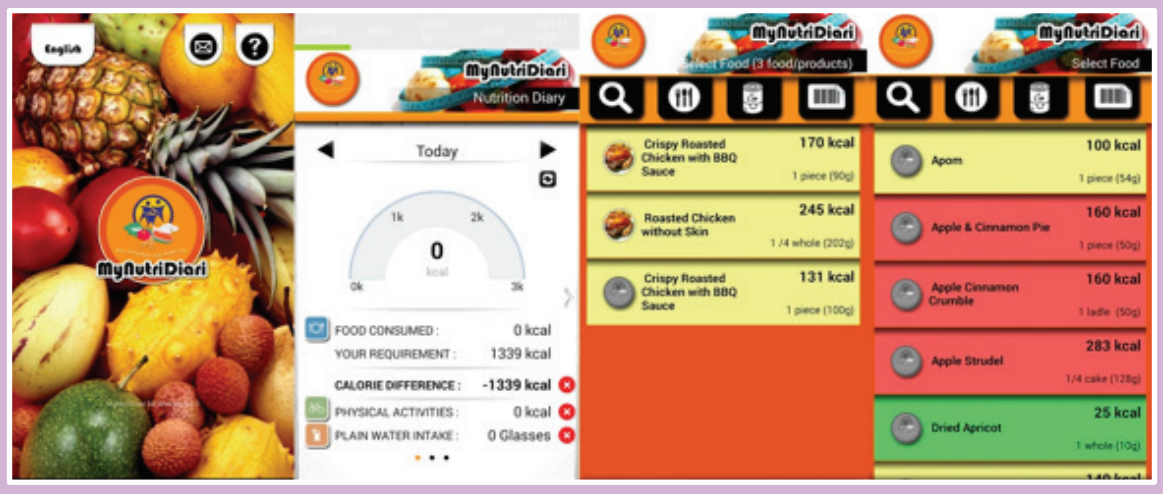
1. KKM

STATUS PROJECT

- ✓ Existing (to be expanded & enhanced)
- ○ Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.3 : HEALTHCARE MONITORING PROGRAM

Smart Initiatives : Information for dengue hotspot area
Objective : Spread information and awareness through digital technologies

DESIRED OUTCOME

1. Give a information and warning message to the community when in the hotspot area

IMPLEMENTATION APPROACH

1. Integration with iDenggi
2. Iintegrate with Putrajaya Corporation Mapping
3. Integrate with Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. BPM

Agency

1. KKM

STATUS PROJECT

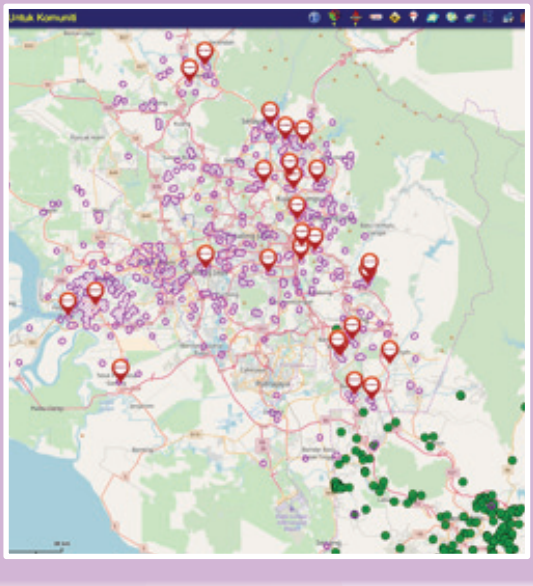
✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM





Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.3 : HEALTHCARE MONITORING PROGRAM

Smart Initiatives : Putrajaya Bebas Asap Rokok (PBAR)
Objective : Spread information and awareness through digital technologies

DESIRED OUTCOME

1. To give tips/informations to stop smoking

IMPLEMENTATION APPROACH

1. Center/ facility for stop smoking
2. Online/ Apps for list of non smoking area in Putrajaya
3. Digital signage for non smoking area
4. Integrate with Putrajaya Mobile Apps

KEY PLAYERS

Internal Department

1. Smart City Division
2. BTMK
3. BPM

Agency

1. KKM
2. KOSPEN

STATUS PROJECT

✓ Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM



Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.4 : INTERACTION AND INCLUSIVITY

Smart Initiatives : City You-Tube Channel
Objective : Providing opportunities for citizens to provide feedback and suggestions to address issues as well as develop new opportunities for themselves;

DESIRED OUTCOME
1. Sharing city activities and news on youtube
IMPLEMENTATION APPROACH
1. Live update throughout youtube, and social media like facebook and Instagram on every event in Putrajaya such as ceremony, sport event or carnivals.

KEY PLAYERS

Internal Department	Agency
1. Smart City Division 2. BTMK	1. KKM 2. MOT

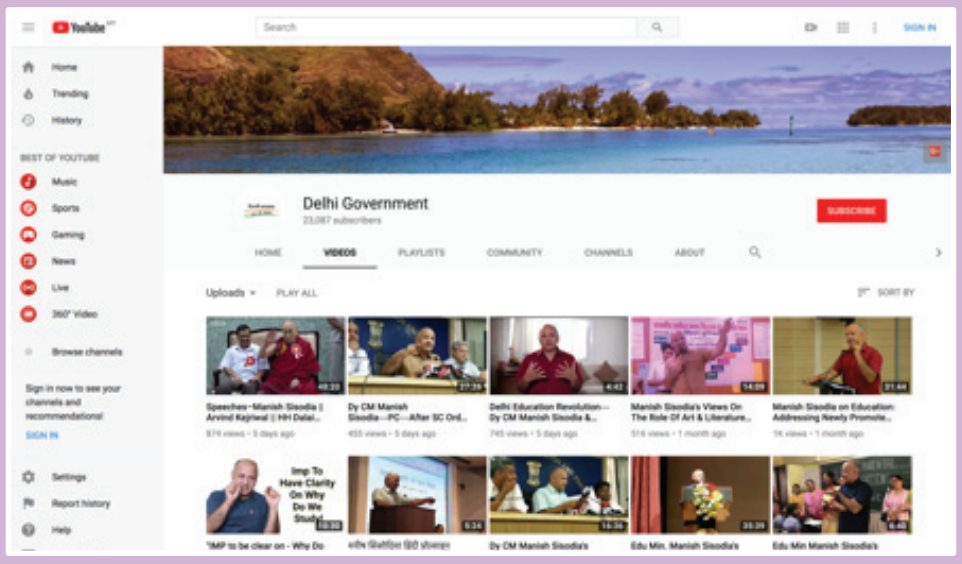
STATUS PROJECT

Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN — SHORT TERM — MEDIUM TERM — LONG TERM



Example Of Illustration & Best Practices

DOMAIN 7 : SMART COMMUNITY
SMART APPLICATION 7.4 : INTERACTION AND INCLUSIVITY

Smart Initiatives : Community interaction platform
Objective : Providing opportunities for citizens to provide feedback and suggestions to address issues as well as develop new opportunities for themselves;

DESIRED OUTCOME
1. Encouraging discussion on issues and solutions
IMPLEMENTATION APPROACH
1. Integration with Putrajaya Corporation Website

KEY PLAYERS

Internal Department	Agency
1. Smart City Division 2. BTMK	1. MPP 2. Community

STATUS PROJECT

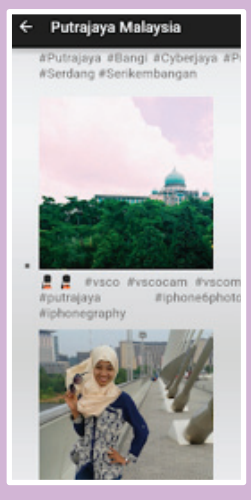
Existing (to be expanded & enhanced)

Future

TIMELINE

QUICK WIN | SHORT TERM | MEDIUM TERM | LONG TERM







Example Of Illustration & Best Practices


Nadiputra
Cashier Code: 1178
Swipe to Pay
Individual Building Report
Monthly Building Energy Index (BEI)

APPENDIX

6.0 APPENDIX

Quick Win (Less Than 1 Year; 2018), Short Term (1-2 Years; 2018-2020); Medium Term (3-4 Years; 2018-2022) And Long Term (More Than 5 Years; 2018-2025).

SMART INITIATIVES	TIMELINE	PAGE
Mobile apps for parking guidance	Quick win	26
Illegal parking control	Quick win	27
Automation Ticketing & payment System	Quick win	29
Cashless bus fare payment system (e.g: e-wallet)	Quick win	30
Dedicated lane for all categories of vehicles	Quick win	33
Journey Planner	Quick win	39
Traffic count using smart CCTV	Quick win	40
Bike sharing facilities & services	Quick win	43
Ride sharing	Quick win	44
Supervisory Control And Data Acquisition (SCADA) For Lake Water Pollution Prevention Control	Quick win	52
Putrajaya Mobile Apps	Quick win	62
Digitalization of land inventory and cadastral data (Land use Governance)	Quick win	64
Electronic submission of development applications (OSC 3.0)	Quick win	66
Complaints on line	Quick win	67
Online License Application	Quick win	69
Online Booking of venues	Quick win	70
GPS of garbage trucks	Quick win	83
Awareness Programme	Quick win	104
Online school admission	Quick win	106
Innovative centre (POINT)	Quick win	108
Children-led climate change adaptive programme	Quick win	109
Real time information of health risk areas	Quick win	111
City You-tube channel	Quick win	115

SMART INITIATIVES	TIMELINE	PAGE
Smart Traffic Lights	Short term	31
Weather monitoring (temperature, rainfall, wind speed and humidity),	Short term	50
Air quality monitoring	Short term	51
Putrajaya Lake & Wetland Management Operational System - PLWMOS (lake water quality, flora & fauna)	Short term	53
Malaysia Urban-Rural (MURNInet) National Indicators Network for Sustainable Development	Short term	54
Putrajaya Command Centre (PCC)	Short term	61,86
Digital information boards at strategic areas for latest news/events/ promotion.	Short term	63
Community Data Profiling	Short term	65
Payment on line	Short term	67
Online registration system (forum/workshop/training)	Short term	71
Free Public Wi-Fi	Short term	73
Material Recovery Facility (MRF)	Short term	84
Panic buttons	Short term	85
Smart CCTV (safety surveillance)	Short term	88
Neighbourhood watch	Short term	90
E-wallet and E-kiosk	Short term	95
Smart Application for city attractions (Putrajaya Mobile Apps)	Short term	96
Tourism feedback (visitors to rate the sites & services)	Short term	98
Smart Application for business promotion (Putrajaya Mobile Apps)	Short term	101
Healthy diet information & education	Short term	112
Information for dengue hotspot area	Short term	113
Community interaction Platform	Short term	116

SMART INITIATIVES	TIMELINE	PAGE
Electronic Board displays to inform on available car parking spaces by location.	Medium term	25
Traffic condition & safety monitoring (Smart CCTV)	Medium term	34
Multi-lingual bus arrival information	Medium term	35
Motion sensors (night time) for energy saving	Medium term	41
Sensor to monitor real time facility problems	Medium term	42
Eco ride (tourists)	Medium term	45
Improvement of bicycle lane and pedestrian walkways	Medium term	47
Rail Based Transport	Medium term	48
Real time energy use monitoring for buildings (including solar PV performance)	Medium term	55
Building Sector Energy Use & Carbon Reporting Programme ($BECO_2R$) for non-residential building (online system & apps)	Medium term	57
City scale GHG inventory system	Medium term	58
Real time water use monitoring	Medium term	59
Create smart home for people	Medium term	60
Centralized Radio Access (C-RAN)	Medium term	72
Wayside Equipment	Medium term	74
Building Integrated Modeling (BIM)	Medium term	78
City Lighting Management	Medium term	79
Sensors for on-site facilities	Medium term	80
Accessible facilities information (OKU)	Medium term	81
Sensors in garbage bins	Medium term	82
Communication Mode for OKU	Medium term	87

SMART INITIATIVES	TIMELINE	PAGE
Dam Integrity Assessment	Medium term	91
Possible Disaster Assessment	Medium term	92
Real time data collection for tourists information	Medium term	97
Smart application to view, sell and buy properties	Medium term	99
Digital billboards	Medium term	100
Digital Free Trade Zone (DFTZ) in Putrajaya	Medium term	102
To set up incubator/lab as to encourage business community to adopt technology	Medium term	103
Digital Library	Medium term	105

SMART INITIATIVES	TIMELINE	PAGE
Pay By Phone (to be integrated with Putrajaya Mobile)	Long term	28
Traffic Calming	Long term	32
Provide bus loading info using colour coding	Long term	36
Application to provide real-time information on public transport	Long term	37
Variable Message Signs to display short traffic condition messages	Long term	38
NGV & EV buses	Long term	46
Autonomous Vehicles	Long term	49
Green Energy	Long term	56
Fiber cabling	Long term	75
Energy saving street light	Long term	76
Energy saving compound light	Long term	77
Licenses Plate Recognition System (LPRS)	Long term	89
Beat Automated Traffic Camera	Long term	93
Speed Awareness Sign	Long term	94
Digital Classroom	Long Term	107
Tele-health services	Long term	110
Putrajaya Bebas Asap Rokok (PBAR)	Long term	114

NOTE

NOTE



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