Smart Selangor Action Plan to 2025 (SSAP 2025)

Prepared by
Smart Selangor Delivery Unit

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The Smart Selangor Action Plan 2025 prepared by the Smart Selangor Delivery Unit (SSDU) was approved by the Majlis Tindakan Ekonomi Selangor (MTES) on 19 August 2020.

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1.0 Introduction

The Smart Selangor programme which aims to make Selangor as the most liveable state within this region was incepted in 2016 with its initial ideas formally presented to the public in the Smart Selangor Blueprint 2016. The first blueprint was developed based on addressing citizen pain points which were then grouped under 12 smart domains and 60 proposed initiatives. About a quarter of these initiatives were completed by January 2020.

After four years, the state government as its primary stakeholder had requested for the programme to be updated to:

1. Ensure alignment with current medium-term term plans drafted after the launch of the 2016 Blueprint, such as the *Rancangan Struktur Negeri Selangor 2035* (RSNS 2035)[i];
2. Examine relevancy of earlier proposed initiatives given changes in technology and environment and propose new ones if applicable;
3. Provide clarity on roadmap and indicators for all outlined initiatives;
4. Find ways and methods for faster, more effective implementation and better coordination with all stakeholders.

Smart Selangor Action Plan 2025 (SSAP) updated the Smart Selangor Smart State programme with new programme domains, initiatives, targets and a clear roadmap for the year 2020 until 2025. These initiatives are also presented together with success indicators which are linked to globally recognised smart city indices for progress measurement until 2025.

The SSAP is structured following the Smart City Strategy Index used by Roland Berger[ii] (an independent, German-based global consulting firm) to evaluate good implementation strategies. Roland Berger had analysed smart city strategy around the world and out of 153 cities, only 15 cities had demonstrated a comprehensive strategic approach and out of these cities only 8 cities are at advanced stage of implementation and have executed these successfully. This approach is essential as it will ensure that the Smart Selangor Action Plan will be able to be implemented most practically and effectively within a 5-year time frame to 2025.

The role of the SSAP is discussed towards the end of this document plan to address some intended outcomes which related to RSNS 2035 and also how all of the SSAP initiatives are linked to deliver the overall three main objectives of the Smart Selangor programme which are liveability, economic productivity and environmental sustainability.

2.0 Selangor the Golden State of Malaysia

2.1 Background

Selangor is an essential state to Malaysia as it is the country's most populated state and its economic powerhouse. It is the 9th biggest among Malaysia's 14 states with a land size[iii] of 7,951 km^2 and home to Malaysia's two largest international airports (KLIA1 & KLIA2) and its largest international container port (Port Klang is the second largest port in ASEAN). It is located strategically in the middle of South East Asia and reachable by more than half of the world's population within five (5) hours of flight time.

Selangor houses about 20% of the Malaysian population[iv] (6.53 million out of Malaysia's 32.7 million in 2019) from various ethnic backgrounds. It has a relatively young population with more than 69% of its population below 40 years old. The ratio of males to females[v] in Selangor in 2019 is almost balanced at 1.1 to 1.

For 2018, Selangor's GDP[vi] stood at RM322.6 billion with GDP per capita of RM51,528 the fifth highest in the country. The services sector is the most significant contributor to the state's GDP with 63.5% contribution followed by manufacturing (28.9%) and construction (5.9%). 3.4 million people are in the workforce with an unemployment rate at 2.8%.

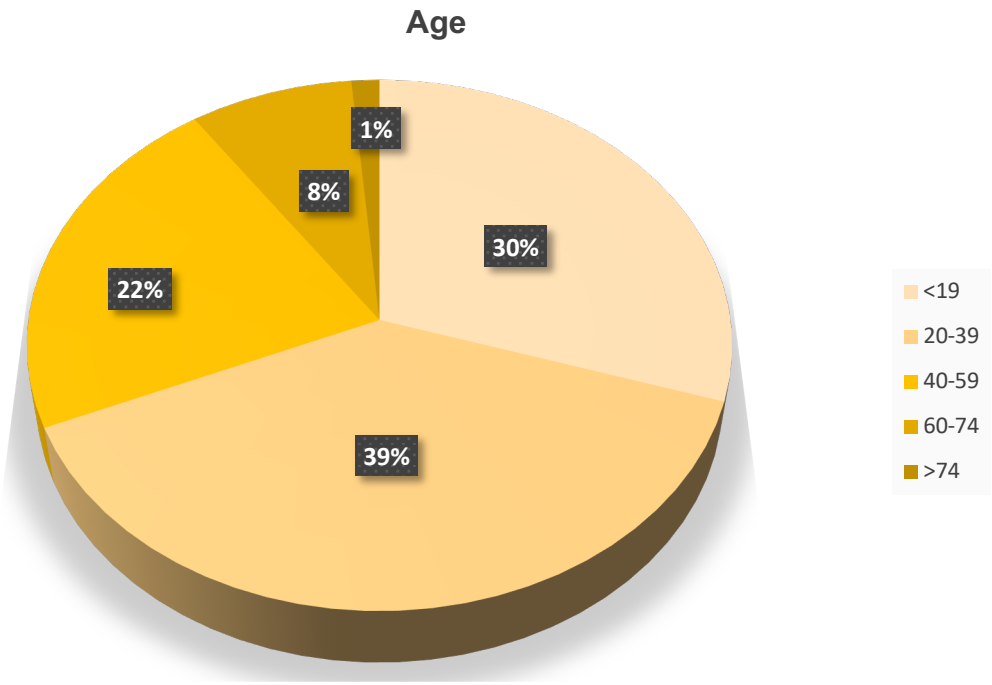


Diagram 2.1 (a): Selangor Age Demography 2019 [vii]

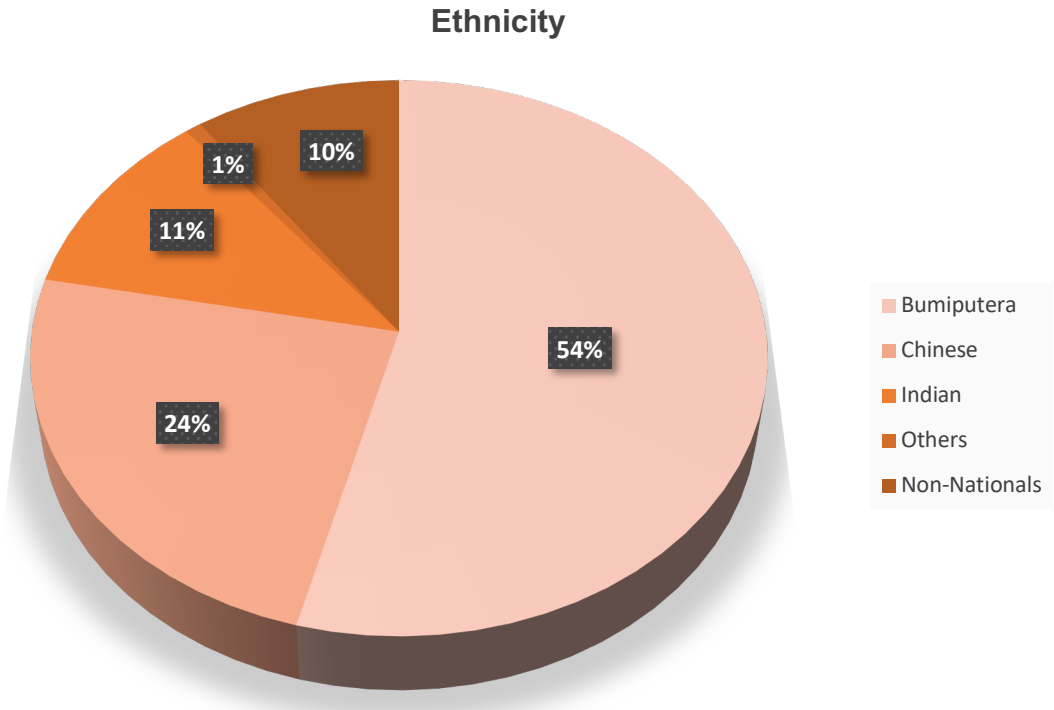


Diagram 2.1 (b): Selangor Population Mix 2019[viii]

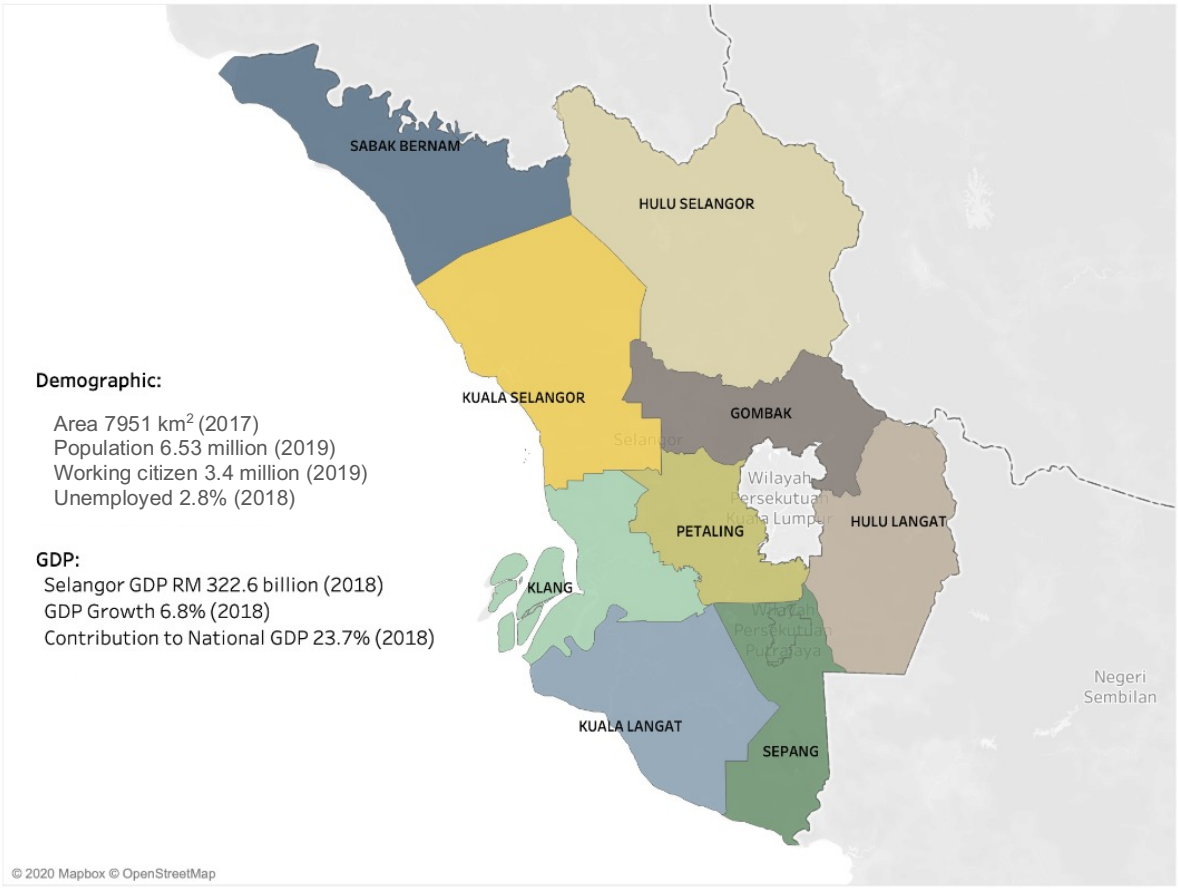


Diagram 2.1 (c): Map of Selangor and its nine administrative districts

2.2 Selangor's Current Success

Selangor has continued being the economic powerhouse of Malaysia. Its existing physical infrastructure and a focus towards enabling more service-based industries had resulted in an annual GDP growth rate of 5% to 7% per annum in recent years. This vibrant economic ecosystem had also resulted in almost 20% of the nation's small to medium enterprises to be located in Selangor. Of these, nearly all of the 3,000 technology start-up companies in Malaysia are based in Selangor. Selangor continues to attract quality investments in high-technology manufacturing such as aerospace parts manufacture and maintenance, automated port management, biotechnology, IR 4.0 manufacturing, fintech and artificial intelligence. Selangor attracts significant amounts of local and foreign investments with a record-breaking total of RM 18.95 billion in 2018[ix]. This achievement is supported by a mature network of connectivity (physical dan digital) infrastructure, a large talent pool from 173 higher education institutions (highest in Malaysia) and a relatively large middle-class demography. More than half of its population makes up its total labour force of 3.4 million with a 2.8% unemployment rate[x].

The state also has a largely developed infrastructure relative to others in Malaysia. Malaysia's largest international container port (Port Klang is the second largest port in ASEAN) and the two largest international airports (KLIA1 & KLIA2) are located in Selangor. The state currently has 94% 4G mobile coverage in populated areas with a target of 98% by 2020[xi]. Broadband penetration was at 133% per 100 citizens for 2018, which was the third largest amongst states in Malaysia. All household in Selangor have access to electricity and piped clean water.

Selangor prides itself with the depth of its talent pool given that it has the highest number of higher education institutions in Malaysia producing more than 40,000 graduates per year. The literacy rate is also very high at 99% and most of its population is multilingual with English widely spoken.

2.3 What Challenges Does Selangor Face Today?

Selangor's current success relies a lot on its vibrant economy, which is an important pillar in ensuring Selangor's livability. People must have the opportunity to make a living and achieve a degree of economic security. Likewise, the state must be able to generate income to sustain itself, invest and create further opportunities for economic growth. Therefore, the state must maintain its role as the country's economic powerhouse. We see two main threats to our present economic position. Firstly, it is the competition from other upcoming states within Malaysia and other centres within the South East Asian region. Within Malaysia, we can see other urban regions like Penang in the North, Johor in the South and even Sarawak in East Malaysia pushing to reinvent themselves to become more competitive in order to attract talent and investment. There also others within South East Asia, namely Vietnam, Indonesia and Thailand which are being seen as other highly attractive destinations for foreign skills and investment.

The second threat to our prominent economic position is the disruptive digital technologies that can render most of Selangor's traditional strength as irrelevant if we don't embrace and use them to our advantage. Disruptive technology is the great equaliser as it allows a newcomer with a limited resource to overthrow highly entrenched incumbents within a short space of time. We have seen how Amazon decimated the retail industry, Uber and Grab upended taxi industry, Airbnb overtook established hotel chains like Hilton or Marriott and Tesla's market capitalisation became bigger than the combined market capitalisation of traditional carmakers like BMW, Ford and Toyota. Unfortunately, Malaysia's track record as the centre of innovation has been spotty despite massive investments by the Federal Government as we are known more as being a nation of technology consumer than the creator. This situation is yet to improve as the latest statistics[xii] showed that only 44% of students in Malaysia made STEM fields their choice, and the government is aiming to increase this percentage to 60%.

Talent and investment are attracted to a destination that offers a high quality of life to its residents despite the place not having any natural resources such as Silicon Valley in the United States and our neighbour Singapore. Low crime rate, squeaky clean environment, highly reliable public transportation, high-quality education, efficient public service delivery system and well-maintained public facilities will serve as a magnet for both talent and quality investment. Selangor is facing severe challenges on these fronts, given the fact that it is the most populous state in Malaysia. Its present population of 6.5 million in 2020 is projected to grow to 7.5 million by 2025. Selangor's crime rate relative to other safer countries is still high, which is at a staggering 69.68% according to Numbeo[xiii], the cleanliness of our public spaces is still much to desire for, our road is congested as people prefer to use private vehicles due to unreliable and not so well-connected public transportation, and it is debatable if we are equipping our youth with relevant skills for their future as youth and graduates unemployment rate is relatively high at 10.5% in 2019 compared with typically 4% for developed countries.

Finally, we aspire to transform Selangor as a liveable state, not just for its present citizens, but for the future as well. Selangor produces the highest amount of domestic waste in Malaysia at about 7,000 tonnes per day and yet its recycling rate is relatively low at below 20%. This has created a strain on its landfills. At the same time, it has the highest number of the registered private vehicles (7 million vehicles) and low ridership of public transport. Malaysia has a disproportionately high carbon dioxide emission per capita – at 7.27 tonnes annually and Selangor, being a thriving economic epicentre, had inevitably contributed to this. Its rivers also suffer from pollution with the prime example of the Klang river that runs through its populous central region resulting in challenges to maintain a river water quality below Class III.

2.4 What is Smart Selangor?

Smart Selangor is the Selangor state government programme with the vision to make Selangor a **liveable Smart State in ASEAN by the year 2025**.

The Smart State programme seeks to address the challenges mentioned in 2.3 and make Selangor the destination of choice for people to live, work, study and play. We believe this can be a reality by achieving the following objectives:

1. To improve **economic productivity** by providing enabling infrastructures needed to support jobs of the new economy based on innovation and to compete regionally and globally for high-value jobs. It will also make it easier for businesses to prosper, citizens to acquire the necessary skills to compete in the digital age;

2. To improve **state's liveability** by creating environments that encourage happier and healthier citizens. They will feel safe in public areas, easy to move around on reliable public transportation, enjoy quality education that prepares citizens for digital future, have easy access to healthcare services and reliable clean water supply. Liveability will be supported by ubiquitous digital infrastructure which makes information and government services easily accessible through mobile devices anytime, anywhere;

3. To preserve our **nature and environment** for future generations by implementing sustainability measures that ensure cleaner and greener public areas, lower production of domestic waste and promote environmentally conscious communities.

At its core, Smart Selangor is an initiative by the state to empower its people, businesses the and public sector to use digital technologies to deliver the above objectives.

2.5 Why a Smart State?

Smart Selangor is an integral part in building the state into a thriving, sustainable and prosperous region by 2035 as envisaged by the *Rancangan Struktur Negeri Selangor* (RSNS) 2035. In order to achieve this vision within an increasingly competitive world and fast-changing environment, it is crucial for Selangor and its citizen to ride the wave of digital revolution and capture the opportunities it brings.

The world is going through a fascinating time as it stands at the beginning of a new industrial revolution fueled by digital technologies. Technological disruption is a global force that the state must confront and harness to its advantage. Today, developments in digital technologies are rapidly advancing, and the next frontier of technologies – big data analytics, artificial intelligence (AI), cloud computing, internet of things (IoT) and robotics – will fundamentally transform the global economy and change the way people live, work and communicate with one another. Digitalisation will be pervasive, and changes life as we know it, institutions, norms and habits.

Digitalisation presents opportunities for Selangor to:

1. Enhance its traditional strengths as Malaysia's economic powerhouse and centre of migration;
2. Address and overcome its present challenges despite constraints of resources;
3. Build new sources of comparative advantage for Selangor.

In order to succeed and stay ahead of its competitors, Selangor's strategies and structures today will need to change and adapt to these digital technologies. This is the reason why Selangor is embarking on its Smart State programme.

The term smart state used hereon denotes a state that adopts the use of ubiquitous information communications and digital technologies in its cities, towns, rural areas and state entities to achieve its intended objectives.

The term **'smart'** in **'smart state'** denotes the use **digital technological solutions** to support government service delivery and also to be used by citizens and businesses. These solutions have to deliver improved efficiencies, better enforcement, real-time data for future policy formulations and faster responses to citizen needs. Ultimately, a smart state implementation allows for a centralised data collection of all state services, devices and processes which will allow **value extraction** and enable derivation of data-driven policies when used in conjunction with specialised data analytics tools and visualisation.

2.6 What Would a Smart State Look Like?

In 2025, Selangor is a vibrant state and one of South East Asia's most attractive destination to live, work or study. This position is based on strategically planned, long-term measures of the state, which over the last ten years have led to a noticeable improvement in all fields of life: economic prosperity, quality of life and environmental sustainability. Selangor is a highly livable place for all; children, young people, women and men, elderly persons, families, entrepreneurs, artists, researchers or persons with special needs. In short, it is a State that is inclusive and open to all, irrespective of their social standing, ethnic origin, where they come from and how long they have lived here. It is recognized for the way it provides ample possibilities of participation to all segments of the population. Citizens take an active part in developing their state through many ways of open participation. Everyone has the opportunity of voicing, discussing and implementing their ideas and opinions within the state.

Selangor embodies a quality of life at the very highest level. It offers affordable quality of life as well as spacious, easily accessible "just around the corner" leisure and green spaces which allow for recreational activities. Social justice is a crucial principle and lays the basis for comprehensive services of general interest in Selangor. The urban structure and municipal services of Selangor generate a feeling of safety and security in the city. Art and culture are crucial drivers of society and constitute an integral element of Smart Selangor 2025.

At any moment, the Selangor population may opt for time-tried and innovative means of transport to meet their mobility requirements. These means of transportation also open up new economic opportunities and leave time for quality time with family or creative development. Movement in the state is characterized by resource preservation and respect for public spaces. As a result, Selangor's citizen experience quality of life-based on clean air and low noise levels day after day. The use of state-of-the-art technologies and high environmental and energy awareness underpins the actions of private households, local council's administration and enterprises in Selangor.

Selangor's population lives in a smoothly functioning urban region. Efficient, intelligent networks and useful information systems facilitate life in the state all around. Selangor citizens are proud of their multifaceted neighborhoods scattered all over the country. These urban centers make for short distances regarding supply and services. People enjoy the wide range of available offerings and appreciate the excellent range of affordable goods and services as well as the manifold possibilities to shape their own cities, which actively supports their everyday life in multiple ways, thereby safeguarding equal opportunities for all.

For students, teachers and researchers, Selangor is a South-East Asian capital of research and hence an attractive location and hub. Selangor maintains a lively exchange of knowledge and thought with other relevant international centers of research. All these developments are based on outstanding educational possibilities that looks to the future yet anchored upon good learnings from the past.

Selangor's prosperity stems from a strong economy that is steeped in the efficiency of the producers of goods and services and its workers. Entrepreneurs develop creative ideas and implement them successfully. The use of cutting-edge information and communication technologies opens up a multifaceted work environment that reacts to diverse interests and skills of both women and men and generates a sufficient number of workplaces designed to enable workers to strike a rightful balance between career and family life. Selangor's economy thrives and generates a wealth of innovations. The state's know-how, products and services in areas such as electrical and electronics, life sciences, food and beverages, transport equipment, machinery equipment and many other segments are exported all over the world.

This vision of Selangor in 2025 can indeed be attained. The basis for this must be laid today via the SSAP and through collaborative decisions that are taken in a spirit of responsibility, day after day, by everyone in Selangor.

3.0 How do We Become a Smart State?

The journey towards becoming a Smart State will not be an easy one. Based on Roland Berger's 2019 study on Smart City, only eight cities managed to execute their respective plan successfully plan. The consulting firm has listed 11 common challenges faced by those who seek to implement Smart City/Region programme:

1. The level of **commitment** from involved parties;
2. The **interests of involved parties differ** significantly;
3. **Unclear priorities** set from top decision-makers to align interests and secure support from all stakeholders;
4. **Regulation**. Smart Cities often require a regulatory framework to oversee the use of new technologies and data. But this only adds to existing statutory and administrative burdens, complicating implementation;
5. **High ramp-up costs** for solutions coupled with **uncertain returns and long payback periods**. This makes upfront funding difficult to secure;
6. **Resistance to change**. Smart City solutions often involve advanced novel ideas, and citizens and stakeholders may not be well verse of their benefits. Instead, they see short-term impact, making projects a difficult sell;
7. Failure to consider the **complexity** of project landscape;
8. Strong organisational **skills** required for the execution;
9. Lack of best-practice **examples;**
10. Lack of **technical know-how** on the implementing parties' side;
11. Lack of **technical capacity**. Smart City solutions frequently involve time-consuming and complex preparation, and city authorities often do not have the time and resources to pull them off.

The Roland Berger Smart City Strategy Index (SCSI) 2019[ii] highlighted seven steps that should be undertaken by National or regional governments to ensure successful implementation of Smart Cities. It also specifies the unique role of national and regional governments as:

*"National and regional governments act as **enablers by providing incentives and guidance** for Smart Cities, as well as **support with solutions.**"*

The seven (7) steps proposed are as follows:

1. **Map initiatives** to create transparency of opportunities;
2. Create **information platforms** that connect all stakeholders;
3. Develop **guidelines on main elements, ideas and intended outcomes** to be followed by other local entities;
4. Establish **data frameworks** that support data collection, analysis and exchange compliant with national laws;
5. Mobilise necessary **funding;**
6. **Run competitions** to incentivise (either financial or technical) development of new ideas and solutions;
7. Promote **knowledge sharing** across various levels through events and workshops.

These seven steps shall form the basis of our SSAP and will permeate through all initiatives to be undertaken in this document.

3.1 Smart Selangor Action Plan Implementation Framework

Initiating the right conceptual framework and subsequently **developing** a practical concept deployment framework will be needed for the successful implementation of a Smart State. A clear structure to implement Smart State was adopted from the Roland Berger Smart City Strategy Index framework for the SSAP, and this framework is illustrated in Diagram 3.1 (a) below.

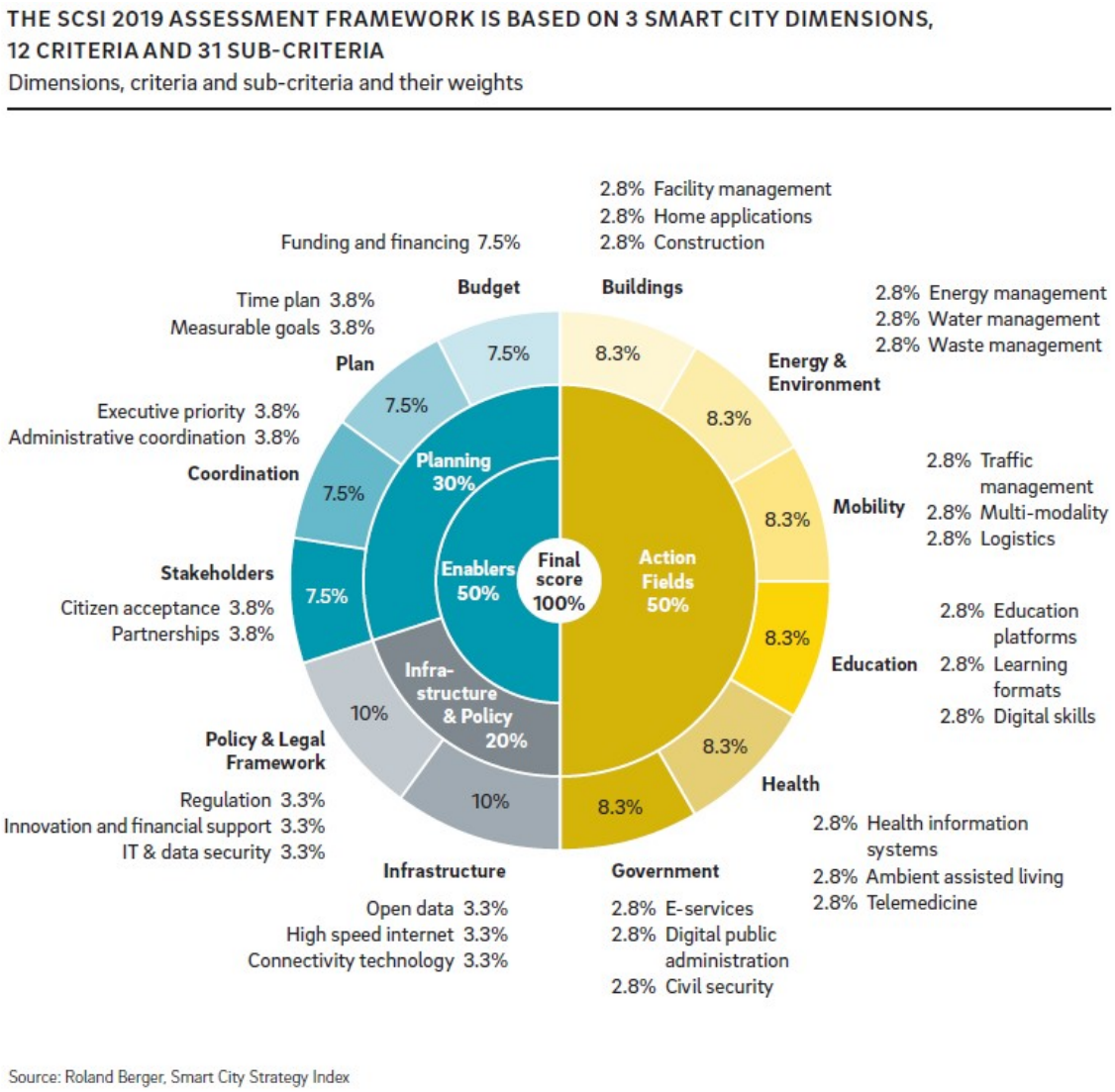


Diagram 3.1 (a): Roland Berger Smart City Strategy Index (SCSI) Assessment Framework.

The SCSI framework used by Roland Berger divides an effective blueprint strategy into two main dimensions, namely 'enablers' and 'fields of action' or smart domains and attach an equal weightage of importance to both. Enablers are pre-requisite elements that must exist before rolling out smart domains. The 'fields of action' is defined as areas where 'enablers' are applied to. A lot of cities immediately focus on building smart domains without actually paying attention to enablers resulting in execution failure. More than 50% of 11 common challenges in Smart City/State implementation falls under Enablers category.

The SCSI framework divided Enabler and Smart Domains into criteria, sub-criteria and weightages in percentages. These weightages provide a useful glance of essential focus areas within any blueprint strategy and also as a means to measure progress towards completing an implementation.

This SSAP document presents concepts, initiatives, roadmap and success indicators based on the seven steps within SCSI to ensure practical implementation and progress monitoring from the perspective of a regional government.

We have allocated the weightage of both dimensions to cater for Selangor to better reflect priorities of the SSAP programme (refer Diagram 3.1 (b)).

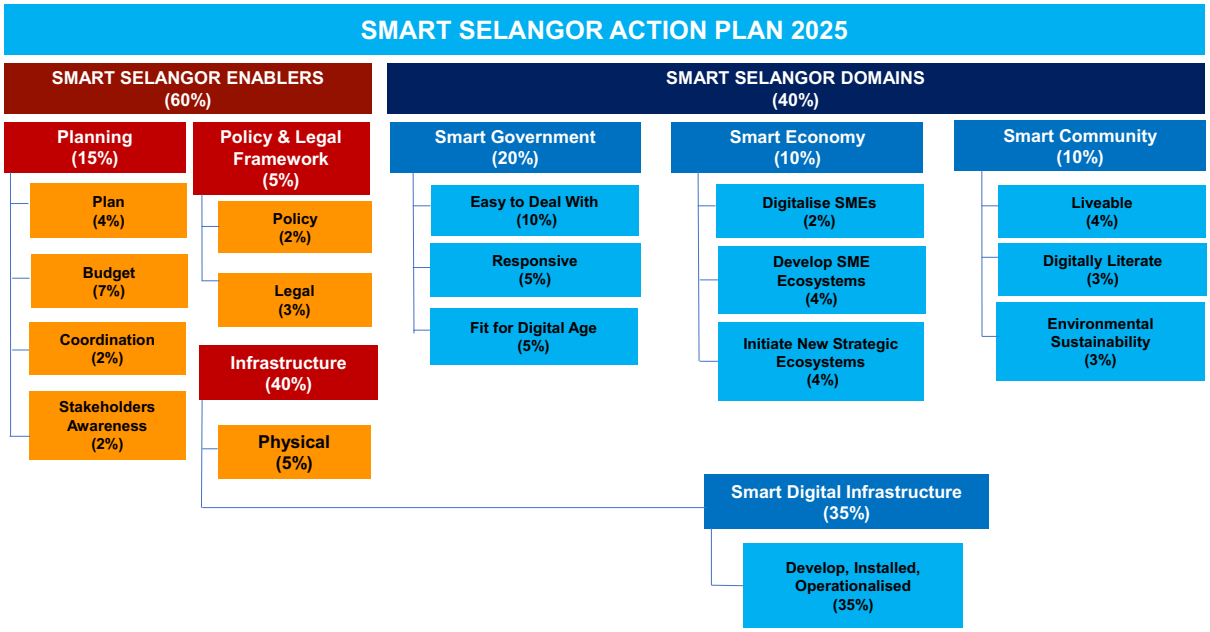


Diagram 3.1 (b): SSAP Enablers, Domains, Outcomes and Weightages

The SSAP adopts the SCSI framework where each framework term used and its equivalent, typically used strategy document term is defined in Table 3.1 (a). From here on these terms will be used formally within the SSAP document.

SSAP framework terms following SCSI	Equivalent typical strategy document terms	Definition
Vision	Vision	Overall vision (macro)
Objectives	Objectives	Macro-level outcomes
Domains	Thrusts or strategic thrusts	Focus areas that need to be addressed to achieve vision
Outcomes	Strategic Outcome	Intended outcomes from each domain
Initiatives	Actionable items	Specific product or programme that can be practically built and measured
Success Indicators	Key Performance Indices	Measurement of each initiative

Table 3.1 (a): SSAP Framework Terms Comparison Against Typical Strategy Document Terms Following SCSI

Terms within the SSAP framework are defined in Table 3.1 (b).

SSAP framework term	Specific definitions within SSAP
Vision	Selangor a liveable Smart State in ASEAN by the year 2025
Objectives	More productive economically, liveable, environmentally conscious Selangor communities
Dimensions	Enablers, Domains
Domains	Smart Government, Smart Economy, Smart Community, Smart Digital Infrastructure
Outcomes	Intended outcomes for each domain
Initiatives	The specific product (application or program) within each domain that achieves a specific measurable intended outcome
Success Indicators	Measurement of each intended outcome based on globally recognised indices

Table 3.1 (b): Definition of SSAP Framework Terms

Smart Digital Infrastructure which involves sensors, network, application and platforms, will be critical to enable the smart state, hence the main domain within the SSAP enabler dimension. **Smart Government** is also a big focus area as it is imperative for the government to embrace and drive the SSAP to drive the **smart economy** and **smart community** domains. In this respect, the government should focus on providing **guidance, initial solutions** and **incentives** to encourage the development of more digital products and subsequent adoption by communities.

The implementation of the above framework must be closely monitored, and any necessary adjustments have to be made quickly. All these must be done through an entity which is mandated by the state government and given the essential authority and funding to enable it to co-create appropriate solutions together with stakeholders at the various levels of government or citizens if necessary. This entity is currently the Smart Selangor Delivery Unit (SSDU) through its legal entity SSDU Innovations Sdn. Bhd., which is wholly owned and governed by the Selangor state government.

The **specific role of SSDU is to act as an enabler** towards developing and building particular initiatives within the SSAP domains. Within this context, SSDU will **design the necessary concept, procurement methods, product specifications and collaborative relations with relevant solution providers and stakeholders** to ensure that the right solution is developed for a given initiative. In cases where a digital solution is being explored for the first time and beyond the capabilities of private sectors, SSDU **should be allowed to build** this by itself. Once any product is operationalised, SSDU should be allowed to **specify relevant procedures** (which are legally binding to the user, through the powers of the state) to ensure safe and sustainable operations of the product.

Proper governance structures must be enabled at various project stages with government representatives and technical experts as its members. Implementation of SSAP initiatives in Selangor has to address five (5) level challenges:

1. To ensure that existing ‘non-smart’ infrastructure is indeed operating according to its intended function(s);
2. To build the digital infrastructure in a cost-effective way;
3. To integrate the digital infrastructure with the physical infrastructure in a secure manner reliably;
4. To ensure that the deployed products within its intended domains are operated effectively following validated financial models. Two possible routes would be to either to hand over the deployment to existing state entities with existing mandates and powers or to create new entities which will be given the necessary mandates to operate it. In both cases, SSDU will have to develop a sustainable financial model for the products without resorting (wherever possible) to continuous financial assistance from the state;
5. Adoption by all stakeholders to ensure the impactful outcome. Active collaborations amongst government, local authorities, agencies, industries and citizens through citizen programs will have to be initiated to ensure adoption by citizens.

Data collection and analysis should be mandated to SSDU or entrusted state entities with suitable big data analytics capability to ensure ‘value’ can be extracted from data directly or to enable the development of new ecosystems in the state based on ‘derived value’ from the data.

3.2 SSAP Addressing Citizen Needs

In so much as the SSAP is going to deliver some of the intended outcomes of the RSNS 2035, it also has to address current Selangor citizen needs in order to provide relevancy to the public.

Smart Selangor Deliver Unit (SSDU) has conducted an online survey campaign from Q1 to Q3 of the year 2020 to ascertain prioritisation of major citizen needs. Throughout the campaign, about 51,515 respondents had participated and marked their prioritisation accordingly. The results are presented in ascending order of priorities in Table 3.2 (a).

Citizen needs	Priority
Education that prepares citizens for digital future	1
Uninterrupted water supply for all	2
Clean and green Selangor	3
Happier, healthier citizens with better well-being	4
Make citizens feel safe anywhere and anytime	5
Reduce domestic waste in Selangor	6
Reduce climate change by going low carbon	7
Create responsive government services available to everyone, accessible everywhere and anytime. To have well maintained and operational public facilities	8
Establish reliable public transportation which will become the preferred travel mode by all	9
Make it easier for citizens to look for meaningful jobs and businesses to prosper	10
Make it easier for both citizens and businesses to enter the digital economy based on innovation	11
Make Selangor the destination of choice for Arts, Culture and Tourism	12

Table 3.2 (a): Citizen Prioritisation of its Top Twelve (12) Needs

Selangor citizens aspire to have better education that prepares them for the digital future, a more reliable water supply, cleaner and greener environment and happier, healthier citizens with better well-being as their top four priority needs. Needs related to the economy are of lesser importance to Selangor citizens compared with the others, reflecting the relatively more already 'affluent' citizen mindset reflective of Selangor as the economic powerhouse of Malaysia.

The citizens' needs were also analysed by local districts whereby it is very clear that local priorities differ for different districts (refer to Table 3.2 (b)). From the Table 3.2 (b), the green colour indicates the top three (3) of citizen needs, whereby the yellow colour indicates the two (2) lowest of citizen needs for each local district. These observations will be useful to guide the prioritisation of initiatives under the SSAP for different districts within Selangor.

Citizen Needs\ Ranking by District	Petaling	Klang	Gombak	Hulu Langat	Sepang	Kuala Langat	Kuala Selangor	Hulu Selangor	Sabak Bernam
1. Make it easier for citizens to look for meaningful jobs and businesses to prosper	10	10	10	10	10	10	10	10	9
2. Make it easier for both citizens and businesses to enter the digital economy based on innovation	11	11	11	11	11	11	11	12	11
3. Make citizens feel safe anywhere and anytime	5	6	5	6	6	6	6	6	6
4. Establish reliable public transportation which will become the preferred travel mode by all	9	9	9	9	9	9	9	9	12
5. Create responsive government services available to everyone, accessible everywhere and anytime. To have well maintained and operational public facilities	7	8	8	8	8	8	8	8	8
6. Uninterrupted water supply for all	1	3	3	2	2	2	4	4	3
7. Education that prepares citizens for digital future	2	1	1	1	1	1	1	1	2
8. Make Selangor the destination of choice for Arts, Culture and Tourism	12	12	12	12	12	12	12	11	10
9. Clean and green Selangor	3	2	2	3	3	3	2	2	1
10. Reduce domestic waste in Selangor	6	5	6	5	5	5	5	5	5
11. Reduce climate change by going low carbon	8	7	7	7	7	7	7	7	7
12. Happier, healthier citizens with better well-being	4	4	4	4	4	4	3	3	4

Table 3.2 (b): Citizen Needs **Prioritisation by District**

4.0 Smart Government: Catalyst for Change

4.1 What is Smart Government?

A smart government is a government that uses digital technologies to derive data-driven policies from multiple data sources, deliver more responsive and efficient services that will be delivered quickly, seamlessly and equitably based around citizen needs and life events, adequately skilled to deliver world class digital services.

Being a smart government also means being obsessed in finding better ways to meet citizen expectations. By 2025, the Selangor government will use digital technologies to deliver more data-driven policies, reduce red tape, better and more responsive services.

Government services will go beyond simply being available online to being organized around citizen needs and life events. The government is able to provide personalised services that remove the need to deal with different departments and layers of government. It will deliver a seamless experience based around citizen needs. The government will alert them when they are eligible for different services and remind them when things are due. The government will show citizens where things are at and offer help when needed.

Both people and businesses will be offered with a simple way of dealing with the government. This may be offline, or online through their favourite devices and suited to their needs. Citizens will be able to do things for themselves, for organizations they act on behalf of, and for people they care for. This means greater flexibility when dealing with the government for citizens and businesses. They will have better ways to express their views and easier ways to engage on issues of importance to them.

The government will be available when needed and stay out of the way when not required, so citizens can go about their lives and businesses to carry out their activities with minimal government interference.

Our vision of a Smart Government is anchored on delivering three (3) main outcomes, which are to:

1. Make it very **easy** for people and businesses **to deal** with the government;
2. Become data-driven government to improve service **responsiveness;**
3. Become a highly capable government which is **fit for the digital age.**

4.2 The Need for Smart Government

Selangor citizen and businesses expect the same experiences interacting with the government as they have with leading private sector organizations. They wished for the government to meet the highest standards of service delivery, customer experience, simplicity, flexibility and ease of use. Also, citizens expect the government to be fair and equitable to everyone. The government should offer several choices for people to access its services. The government should also protect individual data privacy and online account security for its citizens.

4.3 How do We Become a Smart Government?

4.3.1 Become a Data-Driven Government to Improve Service Responsiveness

The government will harness the power of data to improve services and make better, faster decisions. It will use data analysis to make sure services meet citizen and business' needs, to understand better their expectations with the view to improve the quality of future services.

The four (4) objectives to deliver responsive services through better use of data are as follows:

1. To reduce response time for essential services by 50% from 2020 levels;
2. Policy and services will be based on data and analytics;
3. Advanced technologies will improve decision-making, transparency and auditable;
4. To earn citizens and business trust through being trusted custodians of their data.

4.3.2 Make it Easy to Deal With

To make government easy to deal with, citizens need simple and intuitive services that support their needs and life events, while eliminating the need to deal with multiple agencies or layers of government. Digital services must also be secure and convenient to access using devices available to most citizens. By 2025 citizens and businesses will:

1. Be able to access all government services digitally;
2. Have seamlessly integrated services that support their needs based on life events;
3. Be able to use a secure single online digital identity to access all digital government services.

4.3.3 Become Fit for Digital Age

To deliver on these expectations and achieve our Smart State 2025 vision, Selangor's civil service need to uplift their digital skills and capabilities and partner with innovative organizations to deliver the right outcomes. The five (5) objectives to be fit for the digital age are to:

1. Equip civil servants with the skills necessary to deliver world-leading digital services;
2. Adopt better ways of working that bring people together quickly and efficiently and reduce risk;
3. Collaborate with other sectors, including small and medium-sized enterprises, community organizations and academia;
4. Develop sustainable platforms that share data across government;
5. Deliver value for citizens and businesses by better management of costs and risks.

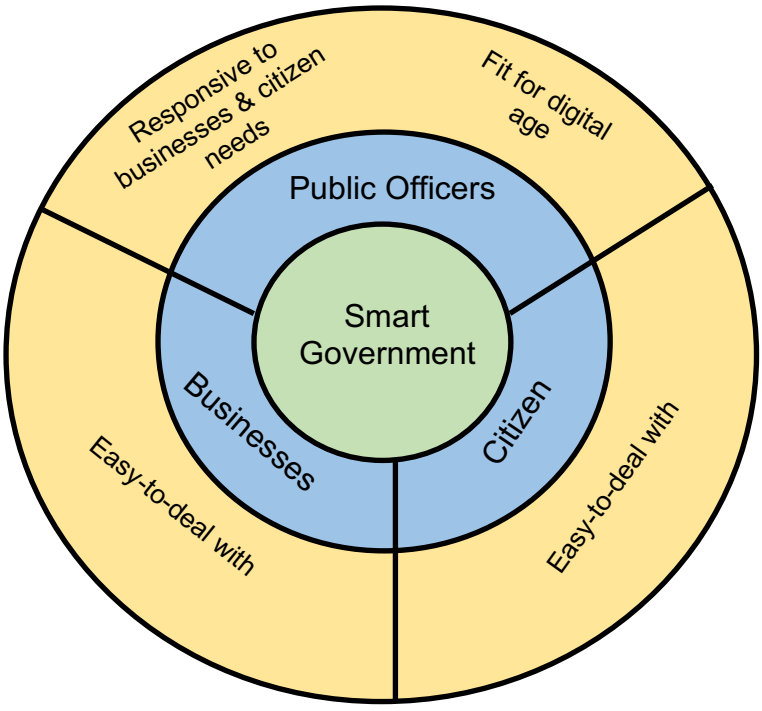


Diagram 4.3 (a): Smart Government Stakeholder Outcomes

4.4 Initiatives for Smart Government and Success Indicators

Seventeen (17) initiatives are proposed for the Smart Government domain as listed in the table below:

Outcomes	Proposed Initiatives	Annual Success Indicators	Impact by 2025
Easy to deal with	Centralised Government Digital Procurement	# products, # transactions	Centralised procurement by 2025 for SUK, PBT and agencies
Easy to deal with	Citizen E-Payments App (CEPat) – Government Services	# users, # transactions by type by PBT	All state payment services on CEPat by 2022
Easy to deal with	Citizen Digital ID Initiative	# participants	Digital ID rolled out (Single Sign-On Govt Services)
Easy to deal with	Digital Government Approval Platform	# services, # users, approval time	Cut approval times by 50% by 2025 from 2020 levels
Easy to deal with	Moments of Life Initiative	# services	All citizen life-related services available on mobile
Fit for Digital Age	Smart Selangor Centre of Excellence (CoE) - Government Hackathon	# new applications	10 hackathons producing minimum of 10 applications
Fit for Digital Age	Cybersecurity Unit	# secured online services (central security policy)	All state digital services have Central Security Policy implemented
Fit for Digital Age	Government Digital Training Programme	# officers trained, # training program	1000 officers trained
Fit for Digital Age	Smart Topography	# participants	Centralised map database used by all state entities
Fit for Digital Age	Smart Waste Disposal Methods	# non-landfill disposal projects deployed	Three major non-landfill disposal technologies implemented
Fit for Digital Age	Smart Selangor Digital Platform (SSDP) – Big Data Analytics Module, User Management, Infrastructure Security Modules	cloudwatch metrics, # datasets	Minimum 150 data sets on SSDP Centralised digital map

Responsive	CCTV analytics	# events captured, response time	50 selected events can be monitored automatically by analytics engine
Responsive	Digitalisation of Water Supply Operations	# annual NRW	Reduce non-revenue water to 25% by 2025
Responsive	Disease Monitoring and Epidemic Management	hotspots, response time	Reduction of response time to manage disease containment by 50% by 2025 from 2020 levels
Responsive	Intelligent Traffic Monitoring System (ITMS)	congestion levels (Travel Time Index)	Traffic congestion remote monitoring of all major roads
Responsive	Selangor C5i Intelligent Operations Centre (SIOC)	# services monitored, response time	50 services monitored. Response time halved from 2020
Responsive	Smart Selangor Command Centre	response time	Assistance response time less than 2 hours

Table 4.4 (a): Initiatives and Success Indicators for Smart Government

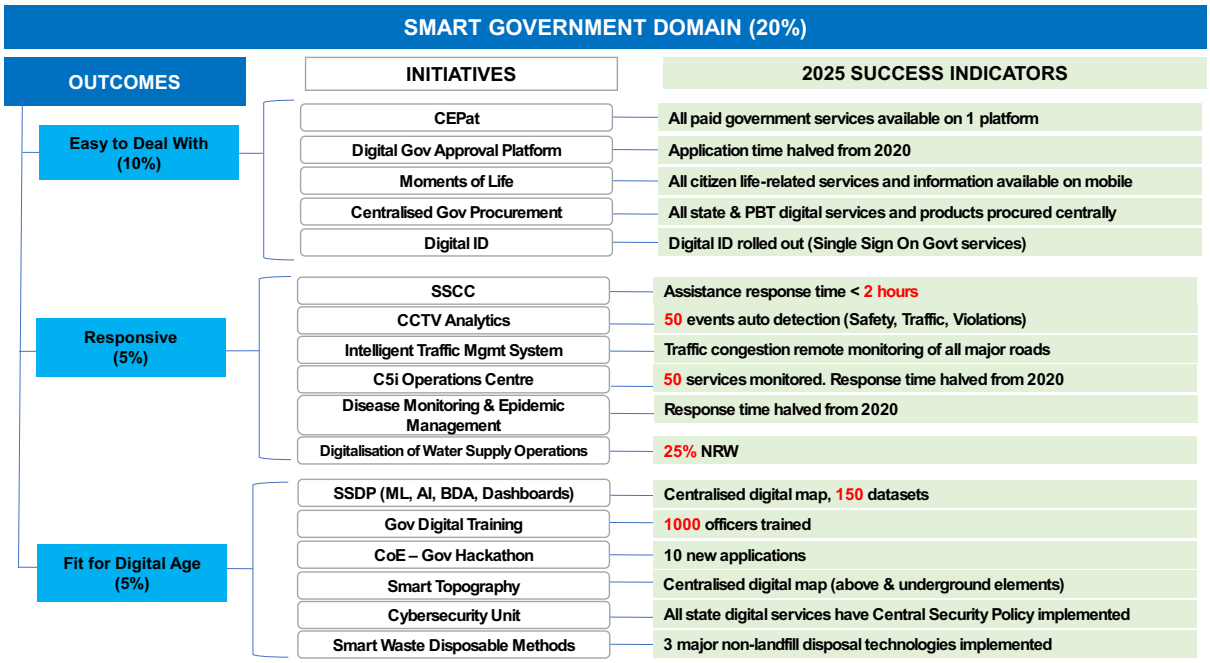


Diagram 4.4 (a): Smart Government Three (3) Outcomes, Seventeen (17) Initiatives and Success Indicators

5.0 Smart Economy: Capturing Possibilities

5.1 What is Smart Economy?

Smart economy is an economy based on digitalization of economic activities both in the digital and non-digital sectors using digitized information and knowledge as the key factor of production, modern information networks as an important economic driver and Information Communication Technology to drive productivity growth and optimize economic structures.

For this SSAP, we are going to use the term "Smart Economy" interchangeably with "Digital Economy". Both the World Economic Forum and the Group of Twenty (G20) interpreted the digital economy as a broad range of economic activities comprising all jobs in the digital sector, as well as digital occupations in non-digital industries. These include activities that use digitised information and knowledge as the key factor of production; modern information networks as a vital economic driver; and Information Communications Technology (ICT) to drive productivity growth and optimise economic structures. Therefore, Smart or Digital Economy covers both the automation or digitalisation of processes in the conventional economy and building a new digital economy ecosystem (also known as internet or knowledge economies).

For the conventional economy such as traditional manufacturing, smart economy looks at encouraging industries to adopt Industrial Revolution 4.0 automation principles or digitalisation of its processes. Much of these have been promoted by Malaysia's Ministry of International Trade and Industry (MITI), reflected in its 2018 National Policy on Industry 4.0[xiv], hence will not be discussed here.

To put it simply, the digital economy is a marketplace that is organised, enabled, and driven by technology. In the end, it will make it easier for citizens to look for appropriate job opportunities, businesses to thrive and even traditional local industries like Arts, Culture and Tourism will have the same opportunity to prosper. The ultimate objective of implementing digital or smart economy is to **enhance the existing value chain of economic activities (of production, consumption and distribution) and exploring new economic activities in the direction of a new collaborative and shared economy[xv].**

Ultimately, smart economy aims to enable several **resilient, hyper-connected, digital economy ecosystems that are adaptable to the dynamic needs of industries and the state**. It also seeks to increase Selangor's Gross Domestic Product (GDP) contribution to Malaysia to 30% by 2025, with agriculture contribution at 5% Selangor GDP.

Fundamentals of the smart economy will be strengthened by actively pursuing excellence in the **next generation foundational sectors** of the digital economy, such as cybersecurity, cloud computing, platform-based marketplace technologies, artificial intelligence and big data analytics. Other domains that encourage innovation such as data, information, resources and talent will be made transparent and democratised with the objective of driving higher productivity either through improved processes or by growing new economic sectors.

Our vision of a Smart Economy is anchored on delivering three (3) main outcomes:

1. Digitalisation of our industries be it services, manufacturing or agriculture with a focus on Small Medium Enterprises (SME);
2. Creation of ecosystems to enable industries to compete better and scale up using digital technologies;
3. Development of next-generation industries of strategic interest to the state.

5.2 Why We Need to Embrace Digital Economy?

We live in an age driven by digital revolution, and to succeed, we must thrive in it. Data and technology continue to change how we live, work and prosper. The world is changing, and unless we evolve with it, we will fall behind our competitors. Businesses need to digitalise, innovate and adjust business models to capture new revenue streams both locally and abroad. Workers in all sectors must continually learn, re-skill and up-skill themselves to take on better and more fulfilling jobs enabled by the digital economy.

Technology has reshaped businesses, industries, and economies at the same time opened up greater access to the marketplace for SMEs, and empowered individuals to become content creators and service providers. The already rapid pace of change we have seen in the past decade is expected to further accelerate in decades to come. Against this backdrop, Selangor must prepare its businesses, workers and people for the digital economy that is upon us.

The digital economy will bring new possibilities and opportunities as it transforms businesses, industries, jobs and lifestyles. These possibilities are unprecedented. Globally, digital transformation is changing the way companies operate, creating new growth prospects for firms, and providing new opportunities for the people. The move towards a Smart Economy is our response to this digital transformation, which is to help our businesses and workforce prepare for and embrace these possibilities.

5.3 How do We Make the Transformation into Digital Economy?

The Initiatives developed under Smart Economy are split to deliver three main outcomes, namely those that seek to **digitalise** existing industries, those that **enable** ecosystems for producing competitive products and services, and, **initiate** new strategic digital economy ecosystems. The smart economy model is illustrated in Diagram 5.3 (a):

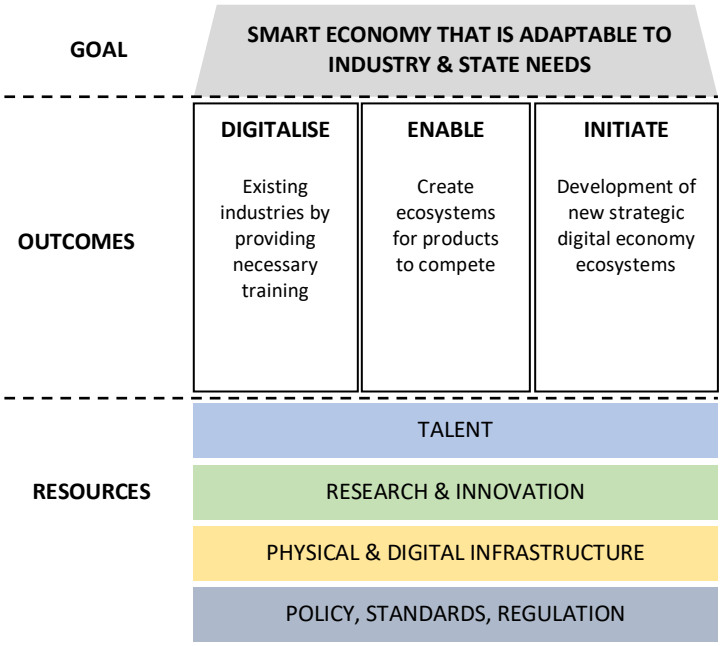


Diagram 5.3 (a): Model for Smart Selangor's Smart Economy

5.3.1 Digitalising Industries

The first step is centered on giving every business the opportunity to adopt digitalization by employing suitable digital technologies. This is particularly critical for Selangor's small and medium enterprises (SME). They are the backbone of the economy as they make up 98.5% of all businesses in Malaysia and contribute around 38% of the national GDP. Companies will face challenges and constraints in their journey towards digitalisation. Some may worry about the costs and whether they have the capacity to do so. Others may not see the immediate benefits of how digitalisation can create new value and revenue streams.

Smart Selangor is able to complement and assist these SMEs to select and customise their digital capabilities at each stage of their growth and make it simple for SMEs to digitalise. We will assist with step-by-step guides for SMEs on their digital journey. Through the Smart Selangor SME programmes, SMEs can also seek advisory services and assistance to customise and design their digitalisation journey, with possible financial support for pre-approved technology solutions.

5.3.2 Creating Ecosystems

The second important step is to support digitalisation efforts that benefit a large number of companies, across multiple sectors. The economy of the past was made up of various industries, neatly categorised according to their different outputs. Take for example, manufacturing. It is the production of goods, whilst construction is concentrated on activities to do with buildings and real estate. Services encompass everything from logistics, legal services to healthcare and social work. Digitalisation will fundamentally alter the supply and demand dynamics in the economy. Ecosystems, and not sectors, will define economic activities. In ecosystems, value chains will converge. Barriers to entry will shift from significant capital investments to large customer networks as distribution models shift from a single point to that of multiple nodes. Today's new ecosystems are the building blocks for tomorrow's industry sectors.

The implications of these shifts are essential. Companies with traditional customer networks will have to plug into several digital platforms and find new partners. Grocery chains may turn to e-commerce platforms to reach out to customers, migrating away from retail stores. Many companies will find that it is no longer sufficient to distribute through just one or two channels — they will have to list their products on several platforms, from Lazada to Shopee and Amazon.

5.3.3 Initiating Development of New Ecosystems

The last step involves developing these newly created ecosystems to spur our industries. At a broader level, these platform-driven multi marketplaces are driving the shift towards integrated ecosystems by creating business models that facilitate efficient connectivity between both consumers and producers. They typically offer businesses ways to scale up with minimal start-up costs and multiply sporadically into new sectors generating new pools of revenue. For example, Grab, a traditional ride-sharing company is now racing into e-payments by leveraging on its massive user database.

The breaking down of traditional nodes of distribution will also mean opportunities for companies to expand their market footprint quickly across sectors and into adjacent businesses, generating new revenue streams. For instance, Malaysia's telco Axiata has made significant investments in the e-payment system through Boost. The telco has invested heavily in this space and may venture into digital banking. New business models will emerge within these ecosystems, made possible by leveraging digital platforms to reach multiple channels. Such digital platforms are enabling new forms of production to create new revenue streams.

New digital economy ecosystems that run on cloud computing, platform-based marketplace technologies, artificial intelligence, cybersecurity and big data analytics will be developed with private sector participation. Local talent development is seen to be a crucial component for this development and we foresee many upcoming collaborations with global players and industry experts, not only in areas of technology but also in the setting up of an appropriate supporting financing ecosystem for business scale-ups.

5.4 Initiatives for Smart Economy and Success Indicators

The proposed initiatives for Smart Economy are listed in the following table:

Outcomes	Proposed Initiatives	Annual Success Indicators	Impact by 2025
Digitalise	AWS Academy	# participants, # programmes	20,000 professionals re-skilled
Digitalise	Cashless society programmes	# businesses adopting cashless	10,000 businesses
Digitalise	Food Price Monitor	# items monitored	All wet food prices in Selangor available online
Digitalise	Industry Data Platform	# companies	5,000 number of companies onboarded
Digitalise	Selangor Tech Start-Up and Accelerator Programs	# start-ups (GovTech, FinTech, MedTech)	300 new start-ups
Digitalise	Smart Factory 4.0	# participants	15,000 new adopters
Develop	CEPat & Marketplace & e-wallets	# services, # partners, # users	All major e-wallets on CEPat, cross wallet marketplace enabled
Develop	Communities Online (COOL): E-Upah module	# users, # active uploads	All 371 traditional villages connected
Develop	Communities Online (COOL): Places of Interest & Tourism module	# users, # active uploads	Tourist arrival doubles from 2020
Develop	SME Platform & Marketplace	# SME, # products	25% of Selangor SME digitalised
Develop	Talent Open Marketplace for Gig Economy	# users	10,000 active users
Initiate	AWS SCALE	# SME, # programmes	5,000 SME trained
Initiate	Smart Selangor Centres of Excellence (CoE) - Government Business Hacks	# site, # new applications	10 hackathons producing minimum of 10 applications

Initiate	Future Economy Committee	# briefs to government	Medium to long-term sustainable economic policies for the state
Initiate	Precision Agriculture	# farmers, # crops, yields	Increase contribution of agriculture to Selangor GDP to 5% by 2025
Initiate	Smart Selangor Digital Platform (SSDP) – Open Data Development Environment	# new applications	25 open data sets

Table 5.4 (a): Initiatives and Success Indicators for Smart Economy

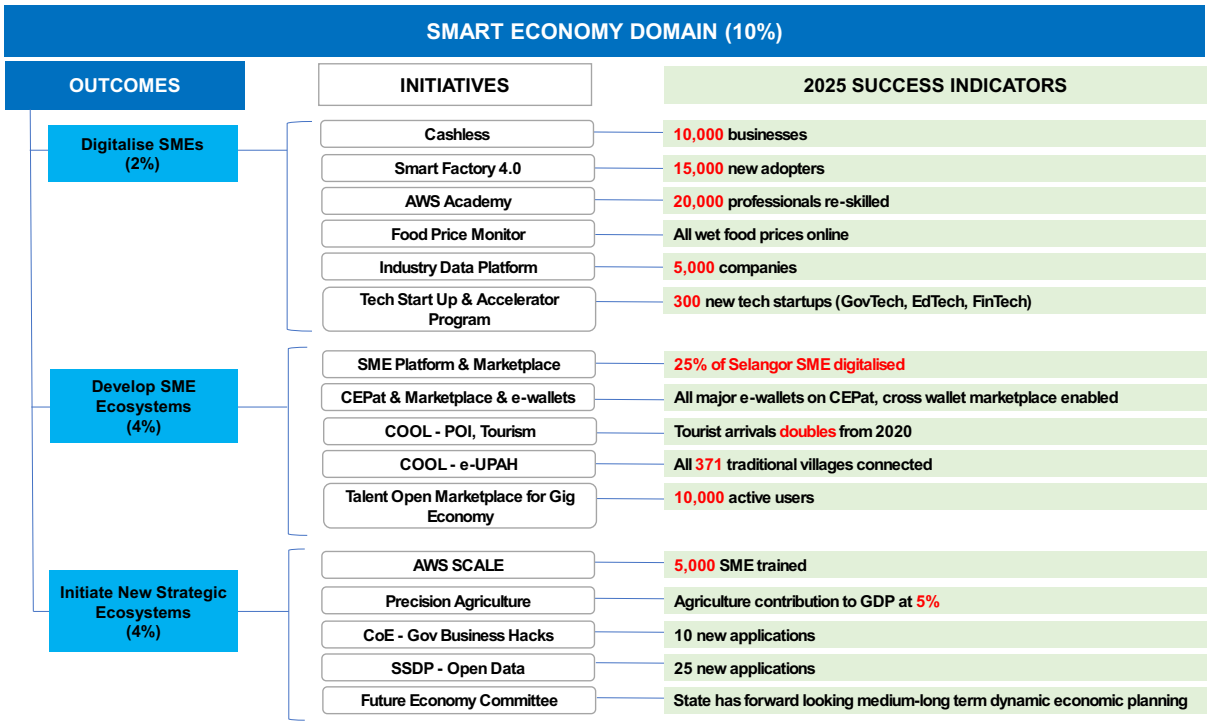


Diagram 5.4 (a): Smart Economy Three (3) Outcomes, Sixteen (16) Initiatives and Success Indicators

6.0 Smart Community: Better Living Through Technology

6.1 What is Smart Community?

Smart communities are composed of groups of people who are committed to collaborate to make faster and smarter decisions on issues that impact society and individual well-being. These collaborations typically cut across various local demography and legal jurisdictions amongst various private and public entities. They use information communication technologies and data to be more efficient, solve challenges, and provide new opportunities. They support the integration of technology and data infrastructure, promote digital technologies to increase the capability of existing infrastructure and services, and champion citizen involvement and citizen-focused service delivery. As a result, they typically have a better quality of life, improved service delivery, enjoy cost and energy savings and a reduced environmental footprint.

Smart Community in this SSAP is defined as digitally connected communities that are equipped with skills to adopt digital tools confidently and empowered to produce more liveable communities and embrace environmental sustainability programmes in a significant way

Our vision of a Smart Community is anchored to produce three (3) primary outcomes:

- Affordable access to easy-to-use digital tools;
- Provide citizens with the necessary skills to use digital tools confidently;
- Encourage adoption of digital technologies to improve community liveability.

6.2 Why Smart Community?

The daily interactions and activities of citizens in a Smart State are growing increasingly digitalised. Not only can digital technologies make our daily lives more convenient and sustainable, but they can also enable us to strengthen our community and society, and help us to connect and look out for one another.

As a result, our traditional community relations will be much stronger via community engagement and collaborations, both via technology-based tools and we can realise new levels of better liveability, safety, informative, environmental sustainability and economic opportunities.

6.3 How Do We Build Smart Community?

6.3.1 Access to Easy-to-Use Digital Tools

A pre-requisite to enable Smart Community is accessibility to the digital world. Access is not just about having computing devices and internet connectivity, as there are other enablers required to facilitate access. This can be in the form of digital ID or easy to use community applications. Take Estonia for example; the mandatory digital identity provides all Estonians with digital access to all of the country's secured multi e-services such as government services, health and emergency services and financial services. A key concern is how can we ensure that all Selangor citizens have the elements needed to participate in building a smart community. Therefore, the focus here will include identifying and building a set of fundamental digital enablers for Selangor citizen to access digital services.

6.3.2 Getting Citizens to be Digitally Literate

A smart community is one where citizens not only have access to technology, but also embrace it, and this requires citizens to be digitally literate. Digital Literacy is defined here as having the skills, confidence, and motivation to use technology effectively and is key to our journey towards Smart Community. Besides an appreciation of what digital technology can do and the know-how to use it, digital literacy is also about being able to think critically about the information that one has received and making good judgements from it. With the proliferation of fake news, being able to discern misinformation has become even more critical. The focus will be on providing digital skills training, especially to those digital non-natives.

6.3.3 Encourage Adoption to Create a Positive Impact

Our end goal for the smart community is to have a better quality of life, improved service delivery, enjoy cost and energy savings and a reduced environmental footprint by leveraging on technology. To achieve this, it is not sufficient for people to just be digitally literate. Instead, the entire community should be motivated to have the confidence to use digital tools to connect with their communities and even to create products, content and services. This is what we mean by adoption, and the focus here will be on community empowerment programmes.

The overall implementation of our Smart Community programme is illustrated below in Diagram 6.3 (a).

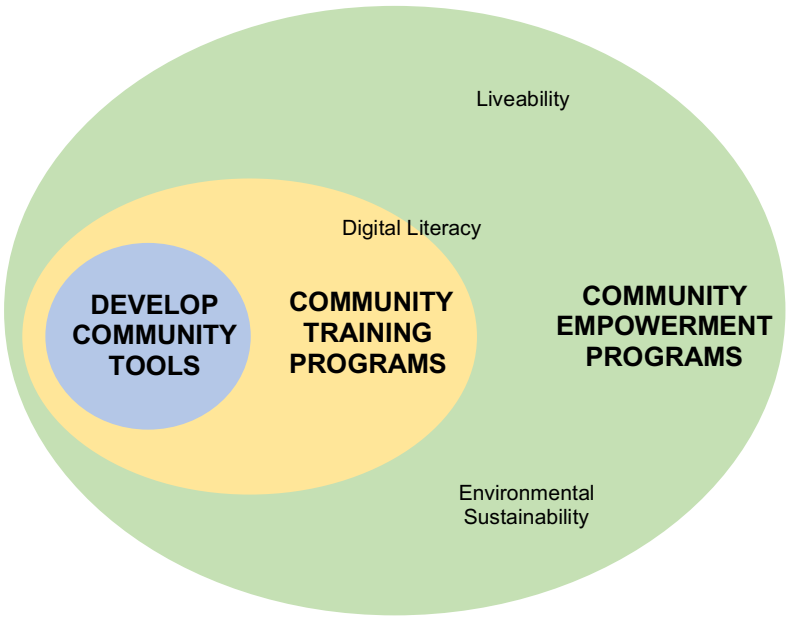


Diagram 6.3 (a): Initiatives and outcomes to realise Smart Communities

6.4 Initiatives for Smart Community and Success Indicators

The proposed initiatives for Smart Community are listed in the following table:

Outcomes	Proposed Initiatives	Annual Success Indicators	Impact by 2025
Livable	Communities Online (COOL): Announcement, News	# news uploaded, # users	Trusted online information source
Livable	Communities Online (COOL): IPR Module	# users	All IPR on COOL
Livable	Communities Online (COOL): Wellness (Parks POI, Lakes POI)	# participants, # users, # uploads	20% reduction in mental cases from 2020
Livable	Communities Online (COOL): Healthcare Module	# participants, # users	All healthcare sites including NGO on app
Livable	Intelligent Disaster Reporting System (IDRS)	# disaster managed, response time	Assistance response time less than 2 hours
Livable	Intelligent Response Selangor (IRS)	# potholes patched # operational traffic lights, response time	Repair SLA 5 days at more than 95% repair efficiency
Livable	Selangor Intelligent Transport System (SITS)	# users	Annual bus ridership up 50% from 2020
Livable	Smart Selangor Parking	# users	3 million users
Livable	Smart Selangor Safe City Concept	# registered users, % safe walkways, # smart poles	Violent crime rate reduction by 50% from 2020
Livable	Tap to Ride	# users	Available on all Smart Selangor buses
Digitally Literate	AWS Educate	# participants, # programmes	200,000 students trained
Digitally Literate	IoT School & i-station	# participants, # programmes	500 participants, 5 programmes

Digitally Literate	Smart Selangor Digital Literacy Initiative	# participants, # programmes	Rural online activities increased by 50% from 2021, 5,000 trainees
Environmental	Communities Online (COOL): Citizen Reporting	response time	Response time less than 30 minutes of report
Environmental	Public Bike Share	# users, bike locations	200,000 bikes
Environmental	Recycling App - Recycle & Barter	amount recyclables by type by PBT, # users	Recycling rate at 30%

Table 6.4 (a): Initiatives and Success Indicators for Smart Community

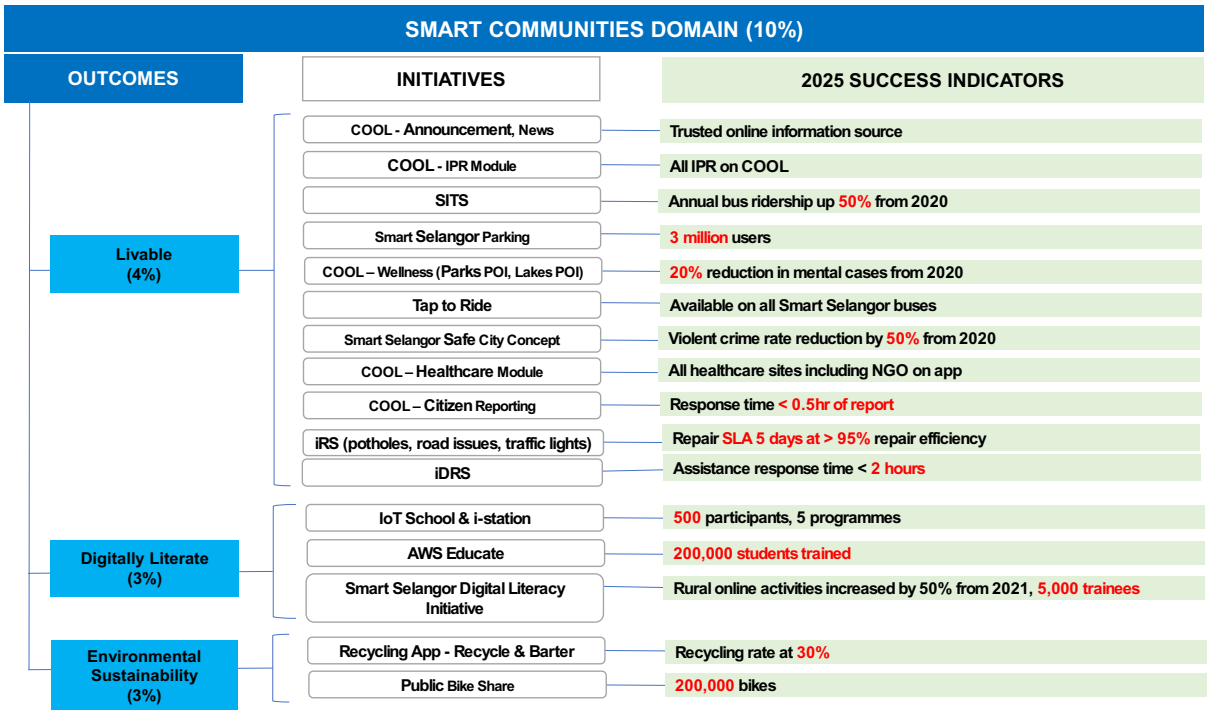


Diagram 6.4 (a): Smart Communities Three (3) Outcomes, Sixteen (16) Initiatives and Success Indicators

7.0 Smart Digital Infrastructure: Enabling the Smart State

7.1 What is Smart Digital Infrastructure?

The enablers for Smart Selangor consist of the physical and digital infrastructure which are needed to power the three SSAP application domains presented in sections 4.0 to 6.0. Greater importance is given to the digital infrastructure component as this will be the focus of development in the SSAP. Digital infrastructure is the shared infrastructure that will power all domains of Smart Selangor. We do not discount a similar need for better physical infrastructure but due to the relatively short timeframe to 2025, a more realistic approach is to apply upgrades to existing physical infrastructure rather than an entirely new conceptual re-think like the digital infrastructure.

Our Smart Infrastructure is anchored in building four main components (acronym '**PANDaS'**) listed below:

- **P**latforms that houses multiple applications (mobile-based and non-mobile) enables rapid multi-dimensional data analysis, permits the development of derived applications and delivers value (monetary or insights) to the smart state;
- **A**pplications that act as mobile connectors to enhance government-citizen relationships;
- High-speed **N**etwork connectivity that will reliably relay collected sensor data to the datastore;
- A high availability, highest tier-certified hybrid **Da**ta Centre that collects all sensor or operational data;
- Sets of **S**ensors and devices that will collect the required data.

However, this domain will not define the specific applications component within PANDaS since these will be a unique initiative under each SSAP domain. Suffice to mention that these applications are a part of PANDaS and are usually connected by platforms, network and data hubs.

7.2 How do We Build Our Smart Digital Infrastructure?

The **PANDaS** components must be built and operated together as the failure of any one component would result in the inability to truly realise the full potential of the smart state implementation besides having the presence of the physical devices itself. For example, the installation of physical CCTVs alone does not guarantee a safe city outcome despite the number of ubiquitous CCTV units. Video feeds can still be interrupted, and even if it is relayed adequately to a central data platform, feed and forensic analytics will yet be required to ensure suspects or suspicious activities get acted upon quickly by relevant enforcers. The ability to have the PANDaS components to **work together coherently and consistently** are amongst the main challenges in delivering the smart state digital infrastructure.

7.3 Initiatives for Smart Digital Infrastructure and Success Indicators

The proposed initiatives for Smart Digital Infrastructure are listed in the table below:

Outcomes	Smart Digital Infrastructure Components	Initiatives	Annual Success Indicators	Impact by 2025
Develop, installed and operationalised	Platforms: Multiple data platforms that connects applications or web-portals to the mothership state data platform, namely Smart Selangor Digital Platform (SSDP)	Blockchain technology standards, concepts and application specification by 2022	# applications adopting blockchain	3 main Smart Selangor applications using blockchain
		Smart Selangor IoT Platform	# devices connected, # entities, # datasets	100,000 devices connected, 50 datasets, IoT Platform can support multiple connectivity protocols and linked to SSDP
	Mobile /Non-Mobile Applications: Apps on mobile devices that connects governments to users either for information share or service provision	SSDP: application development environment module	Application developed on SSDP	Application developed on SSDP
	Affordable High Speed Network Connectivity: Multi-ring, gigabit network that connects all 48 government entities. This primarily powers the smart state applications, supports government operations and Free Public WiFi The Free Public WiFi with minimum 10Mbps access per user has to have a sustainable funding model 2 years after implementation	Smart Selangor Gigabit Network (SeGNet)	# entities connected	All 48 government offices connected by a gigabit connectivity through the SeGNet by 2025
		Smart WiFi 3.0	# hotspots	2,000 strategic highspeed public WiFi hotspots in key areas

	High Availability, Highly rated Data Centre: A hybrid cloud data centre internationally rated to Tier-4 ready. Can be used as primary or recovery data centres by government entities across the state	Smart Selangor Data Centre (SSDC)	# entities onboarded	48 state entities connected on Tier 4 ready, certified Data Centre
	Sensors or Devices: Permit multi-standard, multi-protocol, affordable, easily sourced, compatible with typical IoT or NBIoT connectivity solutions Device will be application specific but compatible on SSDP IoT platform	Air Quality Indicator (AQI)	PM2.5 levels by # locations	Air Pollution source gets identified within 2 hours of detection
		Close Circuit Centralised TV (CCTV)	# units	1,000 new units by 2025
		Panic button	# buttons, response time	1,000 units, Help arrives less than 5 minutes
		River Water Quality Sensors	water class levels, toxic indicators, water level	Class III water quality in installed sites
		Smart Bus Stop	# bus-stops, # users	Number of units, users (15 units installed with 400 daily visitors)
		Smart Street Lamp & Pole	total energy consumption, # lights	100,000 units, 30% power savings

Table 7.3 (a): Initiatives and Success Indicators for Smart Digital Infrastructure

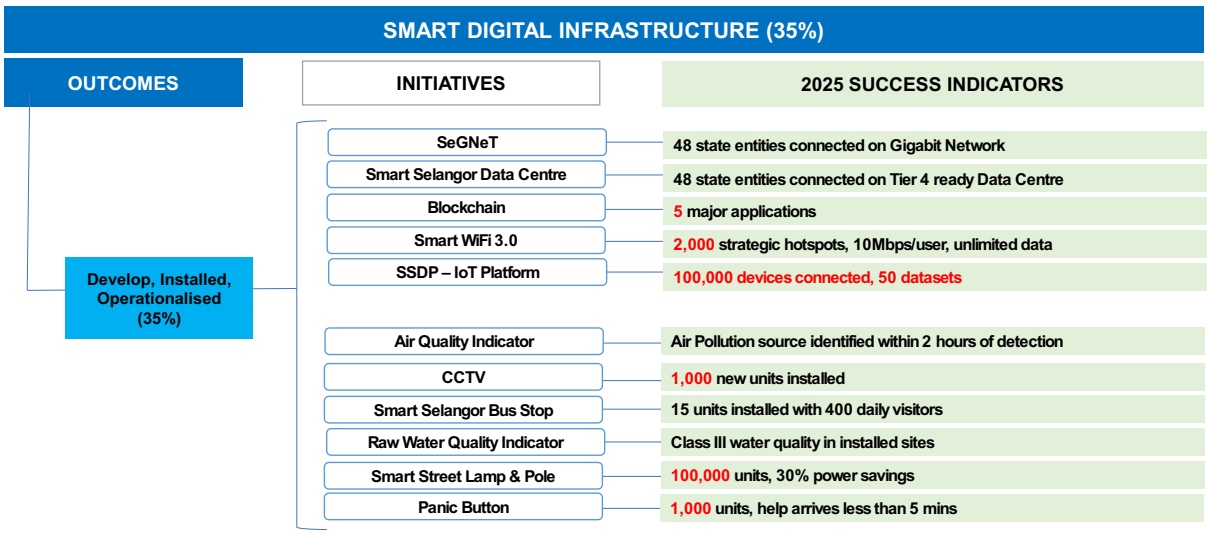


Diagram 7.3 (a): Smart Digital Infrastructure Outcome, Eleven (11) Initiatives and Success Indicators

8.0 Smart Selangor Action Plan Addresses Several RSNS 2035 Policies

The SSAP initiatives address several of the policies and policy initiatives presented in RSNS 2035. These are listed below, and it can be concluded that the SSAP initiatives will indeed address some of the main policies stated in the RSNS 2035 by developing digital solutions as means to address these or as tools to monitor the implementation of these policies in a more effective manner.

Domains	SSAP Initiatives	RSNS 2035 Policies	Related RSNS 2035 Policy Initiatives
Smart Digital Infrastructure	Selangor Gigabit Network (SeGNeT)	BM9: Upgrade of Communications Infrastructure with High Speed Broadband provided for whole state	P1: Encourage Telco's to upgrade main telco infrastructure, especially in cities and industrial areas P2: Widen availability of high speed free WiFi into public areas, villages and libraries
	Smart Selangor Data Centre (SSDC)	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge
	Air Quality Indicator	MP24: Collaborative planning and management of the environment	P4: Multi-party collaborations for integrated environmental management
	Closed Circuit TV (CCTV)	MM19: Prioritise road user safety at all development areas MM5: Use of technology and safe city elements in new housing developments	P1: Provide safer facilities for road users including signages and lighting P2: Implement traffic calming measures in housing and business areas P3: Incorporate safe city concepts such as CCTV and streetlamps in housing areas
	Smart Selangor Bus Stop (SBS)	MM17: Provide user-friendly, safe and holistic support services for public transportation	P2: Provide support services that ensure user safety and comfort
	Raw Water Quality Indicator	MP20: Consistent monitoring of water body pollution sources MP24: Multi-party collaborations in environmental planning and management MM21: Protect raw water supply from pollution	P4: Ensure no illegal development in river reserve areas P4: Practice smart partnerships principles to encourage collaborations in environmental planning and management P4: Improve water quality monitoring and control on rivers
	Smart Street Lamp & Pole	MM19: Prioritise road user safety at all development areas	P1: Provide safer facilities for road users including signages and lighting

	Panic button (SS Bus Stop, Smart Pole)	MM19: Prioritise road user safety at all development areas MM17: Provide user-friendly, safe and holistic support services for public transportation	P1: Provide safer facilities for road users including signages and lighting P2: Provide support services that ensure user safety and comfort
	Blockchain (for halal and ID)	MP15: Increase Urban farming activities in suburbs and cities	P2: Conduct pilot projects in suitable areas P7: Provide best practices guidelines for urban farming
	Smart WiFi 3.0	BM1: Diversified economy based on Knowledge-based economy MP9: Integrate development of villages with town development	P3: Provide high speed broadband to support k-economy activities in all districts P3: Provide village high-speed broadband services equivalent to cities
	SSDP - IoT Platform	BM6: Stronger SMEs with enhanced value chains in manufacturing and high-tech	P1: Encourage development of knowledge-based SMEs P3: Widen local support programmes that accelerates SMEs growth such as high-tech manufacturing or technology acquisition programmes
Smart Government	Intelligent Response Selangor (IRS), Intelligent Disaster Response System (IDRS)	MM19: Prioritise road user safety at all development areas MM10: Provide quality security services and secure public facilities	P1: Provide safer facilities for road users including signages and lighting P5: Increase and encourage multi-party integrated enforcement and patrols P6: Use of ICT and GIS information with relevant security data and statistics P7: Raise community awareness on security issues through community-authority collaborations
	Digitalisation of Water Supply Operations	MP20: Consistent monitoring of water body pollution sources MM21: Protect raw water supply from pollution	P4: Ensure no illegal development in river reserve areas P4: Improve water quality monitoring and control on rivers

		MM24: Reduce NRW from 32% to 20% by 2035	P2: Improve monitoring frequencies to reduce water theft
	Smart Selangor Command Centre	MP24: Multi-party collaborations in environmental planning and management MM10: Provide quality security services and secure public facilities	P4: Practice smart partnerships principles to encourage collaborations in environmental planning and management P5: Increase and encourage multi-party integrated enforcement and patrols P6: Use of ICT and GIS information with relevant security data and statistics P7: Raise community awareness on security issues through community-authority collaborations
	CEPat - Government services	BM2: Towards a high-income society with increased citizen income and zero poverty	P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries
	CCTV analytics	MM19: Prioritise road user safety at all development areas MM10: Provide quality security services and secure public facilities	P1: Provide safer facilities for road users including signages and lighting P6: Use of ICT and GIS information with relevant security data and statistic
	Intelligent Traffic Monitoring System (ITMS)	MM19: Prioritise road user safety at all development areas	P1: Provide safer facilities for road users including signages and lighting P2: Implement traffic calming measures in housing and business areas P3: Encourage dedicated bicycle and motorcycle lanes especially in housing areas

	Smart Selangor Digital Platform (SSDP) - ML, AI, BDA, Dashboard	BM1: Diversified economy based on Knowledge-based economy	P2: Encourage K-economy in strategic growth areas
	Selangor C5i Intelligent Operations Centre (SIOC C5i)	MM9: Better quality and efficient healthcare facilities and services MM10: Adequate quality public safety facilities and services MM19: Prioritise road user safety at all development areas	P6: Improve ambulance respond times P1: Improve police and fire services respond times according to set standards P3: Implement safe city concepts into public areas P5: Increase and encourage multi-party integrated enforcement and patrols P6: Use of ICT and GIS information with relevant security data and statistics P1: Provide safer facilities for road users including signages and lighting P2: Implement traffic calming measures in housing and business areas P3: Encourage dedicated bicycle and motorcycle lanes especially in housing areas
	Government Digital Training (Agile, Tech)	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge
	Centre of Excellence (CoE) - Government Hackathon	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge
	Digital Government Approval Platform	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge
	Disease Monitoring & Epidemic Management	MM9: Better quality and efficient healthcare facilities	P7: Widen tele-medical services to communities P8: Encourage private sector participation to provide healthcare services

			P11: Restrict sales of food/drinks with high MSG/sugar contents
	Smart Topography	MP24: Collaborative planning and management of the environment	P4: multi-party collaborations for integrated environmental management
	Cybersecurity Unit	MM10: Provide quality security services and secure public facilities	P5: Increase and encourage multi-party integrated enforcement and patrols P6: Use of ICT and GIS information with relevant security data and statistics
	Moments of Life	MM9: Better quality and efficient healthcare facilities and services MM10: Adequate quality public safety facilities and services	P6: Improve ambulance respond times P7: Widen availability of tele-medical services to communities P8: Encourage private sector participation to provide healthcare services P11: Restrict sales of food/drinks with high MSG/sugar contents P1: Improve police and fire services respond times according to set standards P3: Implement safe city concepts into public areas
	Centralised Government Procurement	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge
	Smart Waste Disposal Methods	MP30: More effective and environmentally friendly waste management system MP31: Encourage development of green technology in waste management, energy supply, water supply, building and transportation system	P3: Implement new disposal technologies for all types of waste such as waste to energy or material recovery facility in densely populated areas P4: Add more transfer stations or upgrade existing facilities in Gombak, Hulu Langat, Kuala Langat and Klang P10: Install waste to energy, waste to wealth and material recovery facilities in all landfill sites

		MP23: Improve environmental quality in cities	P2: Increase landfill best practices and close all illegal landfills
Smart Economy	Cashless	BM6: Stronger SMEs with enhanced value chains in manufacturing and high-tech	P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries
	Smart Factory 4.0	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge P3: Widen local support programmes that accelerates SMEs growth such as high-tech manufacturing or technology acquisition programmes
	SME Platform & Marketplace	BM2: Towards a high-income society with increased citizen income and zero poverty MM10: Provide quality security services and secure public facilities	P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries P6: Use of ICT and GIS information with relevant security data and statistics
	Selangor Tech Start Up & Accelerator Program	BM3: Development of knowledge-based human capital to support economic activities BM2: Towards a high-income society with increased citizen income and zero poverty	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries

	AWS Academy	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge P5: Train and encourage youth to take up self-sustaining business activities based on creativity and online presence
		BM2: Towards a high-income society with increased citizen income and zero poverty	P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries
	Smart Selangor Cloud Accelerator Learning Programme (SCALE)	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge P5: Train and encourage youth to take up self-sustaining business activities based on creativity and online presence
		BM2: Towards a high-income society with increased citizen income and zero poverty	P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries
		BM6: Stronger SMEs with enhanced value chains in manufacturing and high-tech	P1: Encourage development of knowledge-based SMEs
	Precision Agriculture	BM3: Development of knowledge-based human capital to support economic activities	P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development

		MP15: Increase Urban farming activities in suburbs and cities	P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries P2: Conduct pilot projects in suitable areas P7: Provide best practices guidelines for urban farming
	CEPat & Marketplace & e-wallets	MM14: Public parks, sport and recreational facilities are integrated in one area BM2: Towards a high-income society with increased citizen income and zero poverty MM10: Provide quality security services and secure public facilities	P9: Encourage community-authority collaborations in managing and maintaining of public parks P10: Encourage private sector CSR participation to build these public facilities P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries P6: Use of ICT and GIS information with relevant security data and statistics
	Smart Selangor Centre of Excellence - Government Business Hacks	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge
	Food Price Monitor	MM9: Better quality and efficient healthcare facilities	P11: Restrict sales of food/drinks with high MSG/sugar contents
	Communities Online (COOL)- POI, Tourism	MM14: Public parks, sport and recreational facilities are integrated in one area BM7: Strengthening tourism products potential	P9: Encourage community-authority collaborations in managing and maintaining of public parks P1, P3, P4, P5: Increase visitors at specific tourist sites

			P10: Share information on local lodging locations
	Communities Online – e-UPAH	BM2: Towards a high-income society with increased citizen income and zero poverty	P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries
	Industry Data Platform	BM6: Stronger SMEs with enhanced value chains in manufacturing and high-tech BM3: Development of knowledge-based human capital to support economic activities	P1: Encourage development of knowledge-based SMEs P3: Widen local support programmes that accelerates SMEs growth such as high-tech manufacturing or technology acquisition programmes P6: Conduct detailed study on current and future human capital needs and action plan
	Talent Open Marketplace for Gig Economy	BM3: Development of knowledge-based human capital to support economic activities	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge P5: Train and encourage youth to take up self-sustaining business activities based on creativity and online presence
	Smart Selangor Digital Platform (SSDP) – Open Data Development Environment	BM6: Stronger SMEs with enhanced value chains in manufacturing and high-tech BM3: Development of knowledge-based human capital to support economic activities	P1: Encourage development of knowledge-based SMEs P3: Widen local support programmes that accelerates SMEs growth such as high-tech manufacturing or technology acquisition programmes P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge P6: Conduct detailed study on current and future human capital needs and action plan
	Future Economy Committee	BM3: Development of knowledge-based human capital to support economic activities	P6: Conduct detailed study on current and future human capital needs and action plan

Smart Community	Communities Online (COOL)-Citizen Reporting	MP24: Collaborative planning and management of the environment MM21: Protect raw water supply from pollution MP23: Improve environmental quality in cities MM10: Provide quality security services and secure public facilities	P4: Multi-party collaborations for integrated environmental management P4: Improve water quality monitoring and control on rivers P2: Increase landfill best practices and close all illegal landfills P3: safe city concepts such as CCTV and lighting in community centres P5: Increase and encourage multi-party integrated enforcement and patrols P6: Use of ICT and GIS information with relevant security data and statistics P7: Raise community awareness on security issues through community-authority collaborations
	Selangor Intelligent Transport System (SITS)	MM15: Implement travel demand management system for transportation MM16: Increase the share of public transportation use to 60% by 2035 MM17: Provide user-friendly, safe and holistic support services for public transportation MM20: Widen the use of Rail and Bus Rapid Transport as main public transportation modes	P2: Encourage use of public transportation P3: Implement Integrated Traffic Information System (ITIS) for relaying real-time traffic information via mobile phones P10: Reduction of car parking bays and increase parking rates for cities P1: Form a state-level committee to manage an integrated public transportation system P2: Provide support services that ensure user safety and comfort P3: Ensure rail and BRT services are supported by other more modes of transportation.
	Smart Selangor	MM15: Implement travel demand management system for transportation	P2: Encourage use of public transportation

	Parking (SSP)	MM16: Increase the share of public transportation use to 60% by 2035 MM17: Provide user-friendly, safe and holistic support services for public transportation	P3: Implement Integrated Traffic Information System (ITIS) for relaying real-time traffic information via mobile phones P10: Reduction of car parking bays and increase parking rates for cities P1: Form a state-level committee to manage an integrated public transportation system P2: Provide support services that ensure user safety and comfort
	IoT School & i-station	BM6: Stronger SMEs with enhanced value chains in manufacturing and high-tech BM3: Development of knowledge-based human capital to support economic activities	P1: Encourage development of knowledge-based SMEs P3: widen local support programmes that accelerates SMEs growth such as high-tech manufacturing or technology acquisition programmes P6: Conduct detailed study on current and future human capital needs and action plan
	Communities Online (COOL) - Wellness (Parks POI, Lakes POI)	MP2: Controlled urbanisation MM9: Better quality and efficient healthcare facilities MM14: Public parks, sport and recreational facilities are integrated in one area	P8: Plan Malaysia to study suitability of using 'Tree Canopy Coverage' index for green cities P7: Widen tele-medical services to communities P8: Encourage private sector participation to provide healthcare services P11: Restrict sales of food/drinks with high MSG/sugar contents P9: Encourage community-authority collaborations in managing and maintaining of public parks P10: Encourage private sector CSR participation to build these public facilities

	Recycling App - Recycle & Barter	MP29: Municipal waste reduction and 30% recycling target by 2035	P2: Transparency of recycling data by total, location, month P3: Provide incentives to encourage local reduce, reuse and recycling activities
	Tap to Ride, Selangor Intelligent Transport System (SITS)	MM15: Implement travel demand management system for transportation MM16: Increase the share of public transportation use to 60% by 2035 MM17: Provide user-friendly, safe and holistic support services for public transportation MM20: Widen the use of Rail and Bus Rapid Transport as main public transportation modes	P2: Encourage use of public transportation P3: Implement Integrated Traffic Information System (ITIS) for relaying real-time traffic information via mobile phones P10: Reduction of car parking bays and increase parking rates for cities P1: Form a state-level committee to manage an integrated public transportation system P2: Provide support services that ensure user safety and comfort P3: Ensure rail and BRT services are supported by other more modes of transportation
	Public Bike Share	MM19: Prioritise road user safety at all development areas	P1: Provide safer facilities for road users including signages and lighting P3: Encourage dedicated bicycle and motorcycle lanes especially in housing areas
	AWS Educate	BM3: Development of knowledge-based human capital to support economic activities BM2: Towards a high-income society with increased citizen income and zero poverty	P1: Develop local R&D and incubator centres that promotes, innovation, skills and knowledge P5: Train and encourage youth to take up self-sustaining business activities based on creativity and online presence P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development

			P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries
	Smart Selangor Digital Literacy Initiative	BM2: Towards a high-income society with increased citizen income and zero poverty	P1: Provide training facilities at educational institutions for knowledge and training in available job opportunities including entrepreneurship development P4: Provide business opportunities and entrepreneurial support programmes for online business and export product development for small and micro industries
	Smart Selangor Safe City Concept (VSP app, smart pole, safe walkways)	MM5: Use of technology and safe city elements in new housing developments MM10: Provide quality security services and secure public facilities	P3: Incorporate safe city concepts such as CCTV and street lamps in housing areas P3: Safe city concepts such as CCTV and lighting in community centres P5: Increase and encourage multi-party integrated enforcement and patrols P6: Use of ICT and GIS information with relevant security data and statistics P7: Raise community awareness on security issues through community-authority collaborations
	Communities Online (COOL) - Healthcare Module	MM9: Better quality and efficient healthcare facilities	P7: Widen tele-medical services to communities P8: Encourage private sector participation to provide healthcare services P11: Restrict sales of food/drinks with high MSG/sugar contents

Table 8.0 (a): Smart Selangor Action Plan Addresses Several RSNS 2035 Policies

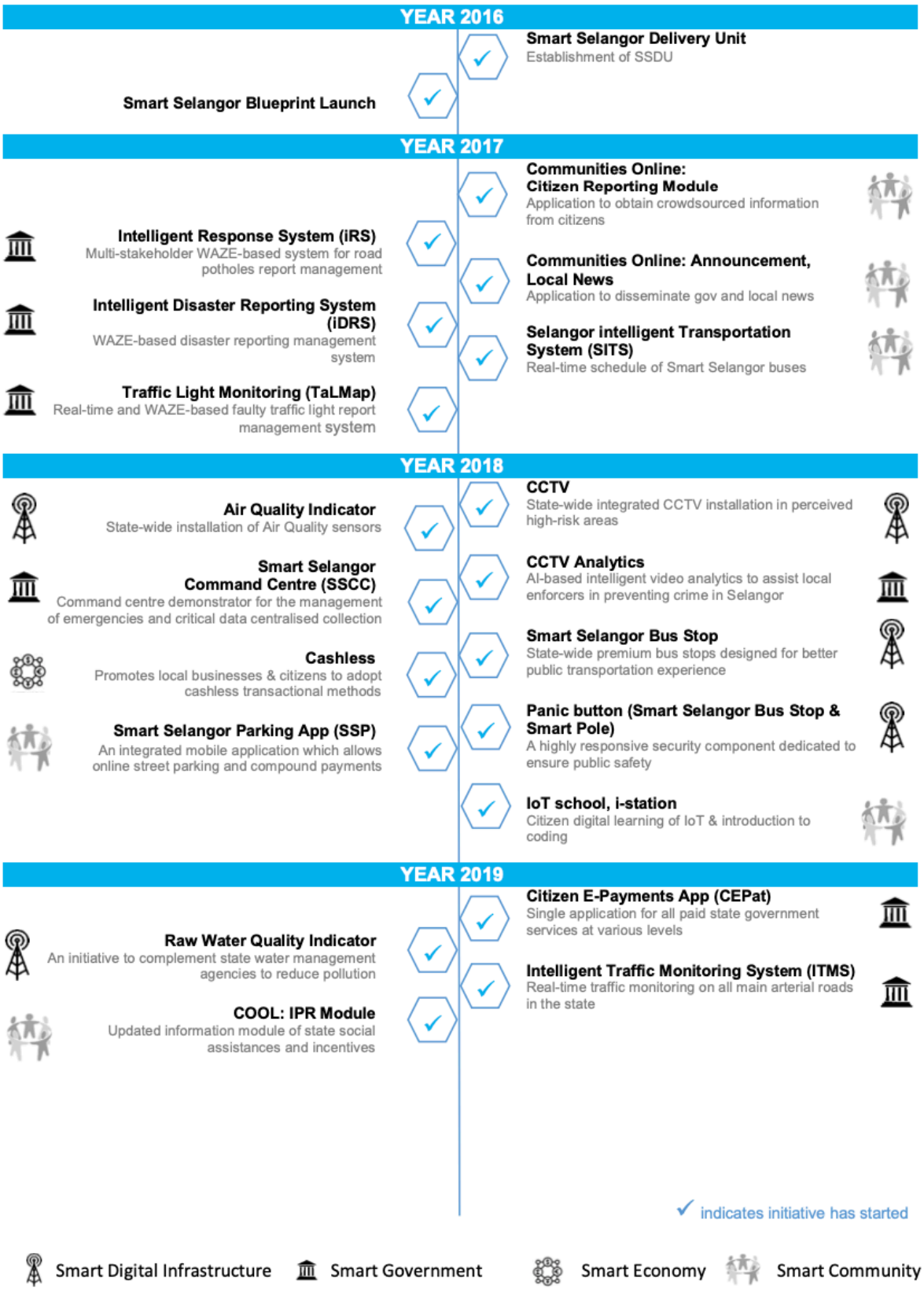
9.0 Roadmap

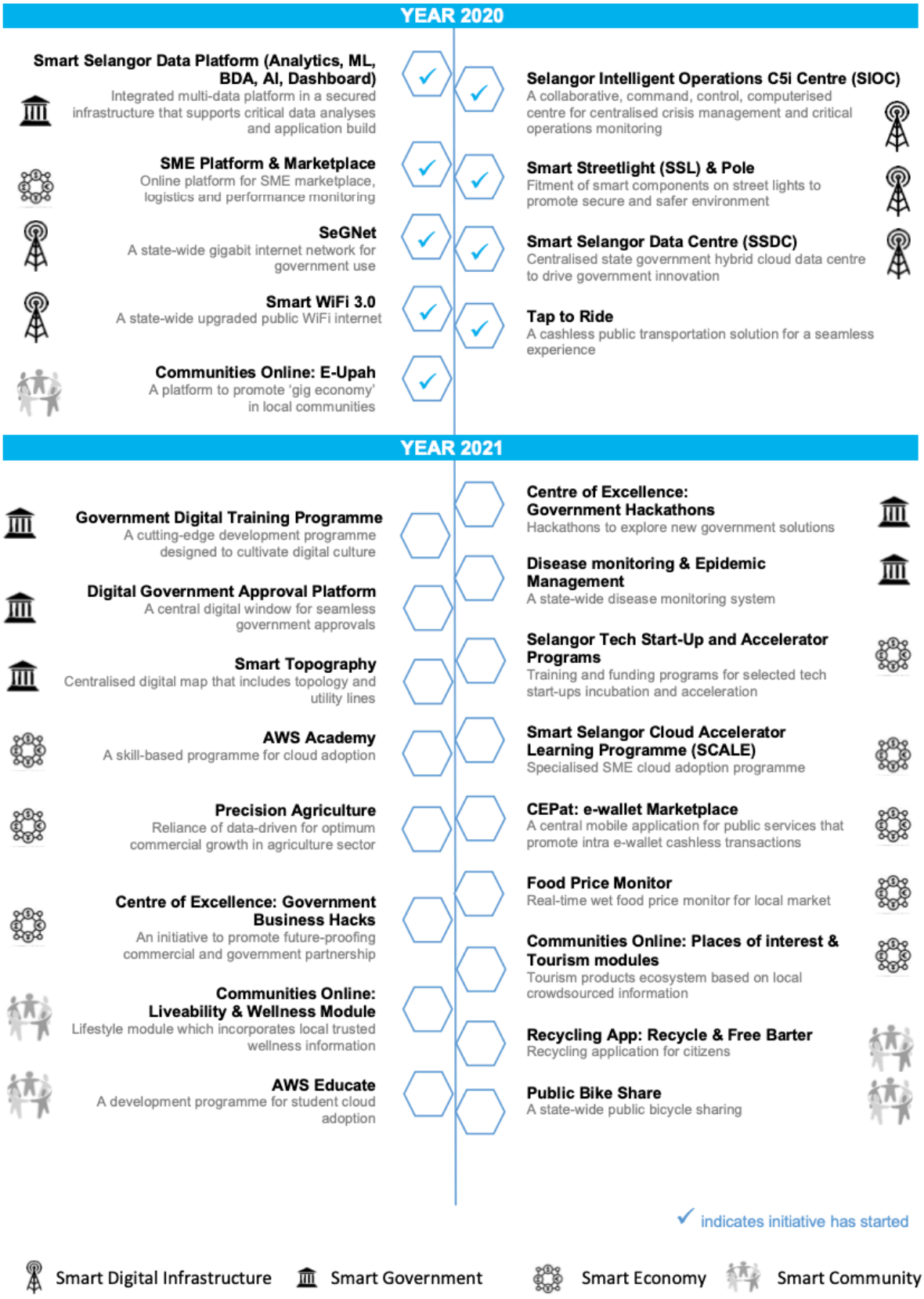
The implementation of the initiatives within the SSAP programme from the year 2016 to 2025 is illustrated in Diagram 9.1 (a). The ‘tick boxes’ indicate the year in which each initiative had started to be implemented.

The specific details of each of these initiatives will only be described when it is started and will include concepts, stakeholders, business models and budget, all of which will have to be endorsed by the Smart Selangor governance committees annually.

The years 2024 and 2025 will allow for a two-year maturity period for the initiatives to scale further or to stabilise in its intended applications.

SMART SELANGOR INITIATIVES ROADMAP TO 2025




YEAR 2020
Smart Selangor Data Platform (Analytics, ML, BDA, AI, Dashboard)
Integrated multi-data platform in a secured infrastructure that supports critical data analyses and application build
SME Platform & Marketplace
Online platform for SME marketplace, logistics and performance monitoring
SeGNet
A state-wide gigabit internet network for government use
Smart WiFi 3.0
A state-wide upgraded public WiFi internet
Communities Online: E-Upah
A platform to promote 'gig economy' in local communities
Selangor Intelligent Operations C5i Centre (SIOC)
A collaborative, command, control, computerised centre for centralised crisis management and critical operations monitoring
Smart Streetlight (SSL) & Pole
Fitment of smart components on street lights to promote secure and safer environment
Smart Selangor Data Centre (SSDC)
Centralised state government hybrid cloud data centre to drive government innovation
Tap to Ride
A cashless public transportation solution for a seamless experience
YEAR 2021
Government Digital Training Programme
A cutting-edge development programme designed to cultivate digital culture
Digital Government Approval Platform
A central digital window for seamless government approvals
Smart Topography
Centralised digital map that includes topology and utility lines
AWS Academy
A skill-based programme for cloud adoption
Precision Agriculture
Reliance of data-driven for optimum commercial growth in agriculture sector
Centre of Excellence: Government Business Hacks
An initiative to promote future-proofing commercial and government partnership
Communities Online: Liveability & Wellness Module
Lifestyle module which incorporates local trusted wellness information
AWS Educate
A development programme for student cloud adoption
Centre of Excellence: Government Hackathons
Hackathons to explore new government solutions
Disease monitoring & Epidemic Management
A state-wide disease monitoring system
Selangor Tech Start-Up and Accelerator Programs
Training and funding programs for selected tech start-ups incubation and acceleration
Smart Selangor Cloud Accelerator Learning Programme (SCALE)
Specialised SME cloud adoption programme
CEPat: e-wallet Marketplace
A central mobile application for public services that promote intra e-wallet cashless transactions
Food Price Monitor
Real-time wet food price monitor for local market
Communities Online: Places of interest & Tourism modules
Tourism products ecosystem based on local crowdsourced information
Recycling App: Recycle & Free Barter
Recycling application for citizens
Public Bike Share
A state-wide public bicycle sharing
indicates initiative has started
Smart Digital Infrastructure
Smart Government
Smart Economy
Smart Community

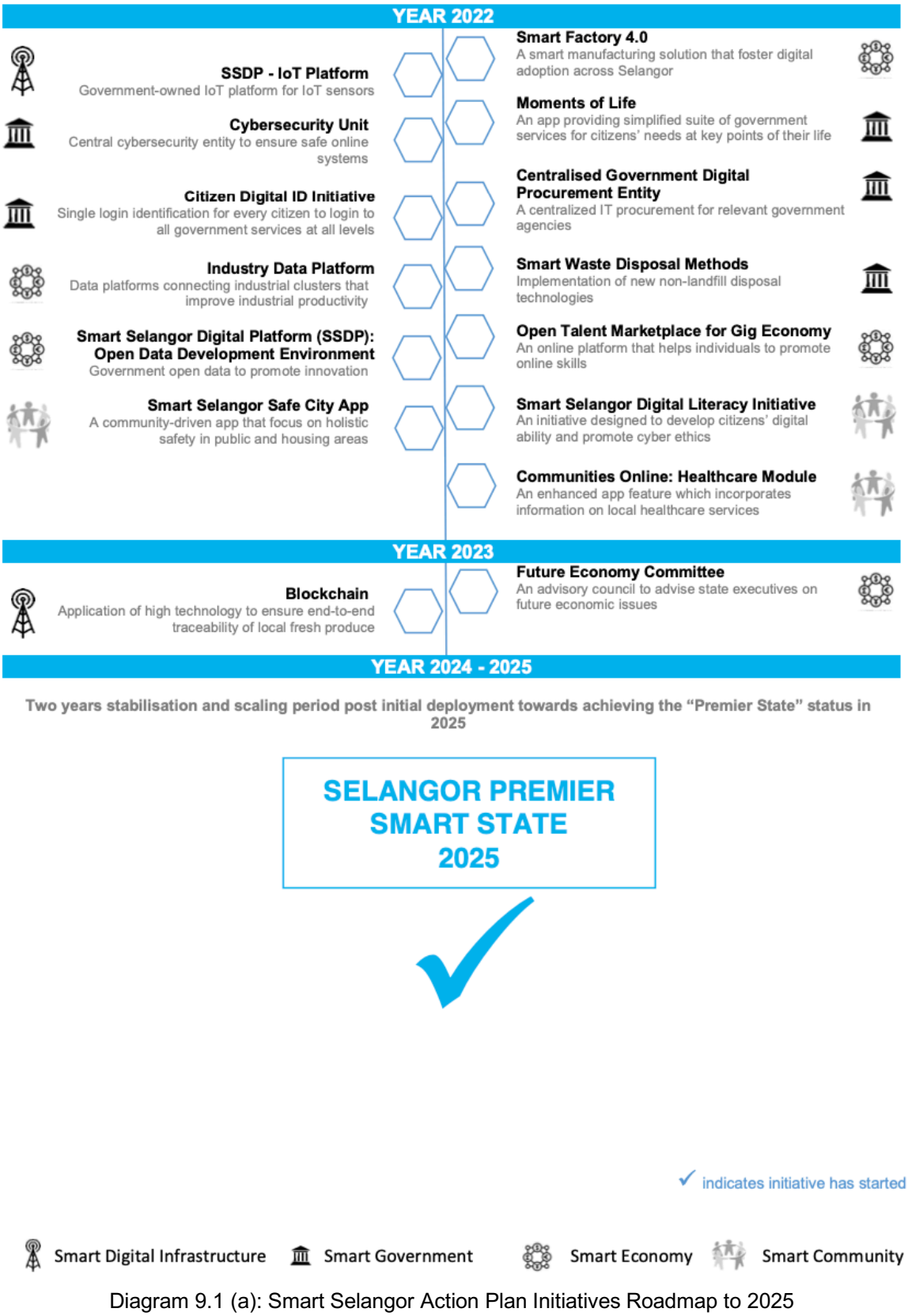


Diagram 9.1 (a): Smart Selangor Action Plan Initiatives Roadmap to 2025

10.0 Putting It All Together

10.1 SSAP Initiatives and Success Indicators

SSAP initiatives grouped by the SSAP domains together with its annual success indicators are tabulated in Table 10.1 (a). Equivalent international indicators are also listed in the same table, such as:

1. United Nations for Smart Sustainable Cities (UN4SSC);
2. Singapore Government;
3. Swiss Institute of Management Design (IMD-SUTD); and
4. KPKT My Smart City Indicators.

Domains	Initiatives	Smart State Annual Success Indicators	Intl Equivalent Success Indicators	Intl Indices source
Smart Digital Infrastructure (35%)	SeGNeT	# entities connected	# ICT sector employee	U4SSC: ICT sector employment
	SSDC	# entities onboarded	# ICT sector employee	U4SSC: ICT sector employment
	Air Quality Indicator	PM2.5 levels by # locations	# days recorded as good and medium measured by API	MySmart City Indicator: Air pollution
	CCTV	# units	# public services delivered electronically	U4SSC: e-government
	SS Bus Stop	# bus-stops, # users	Violent crime rate per 100,000 inhabitants, traffic fatalities	U4SSC: Violent crime rate, traffic fatalities, pedestrian infrastructure
	Raw Water Quality Indicator	water class levels, toxic indicators, water level	Reduction in # of rivers in class IV and V per yr	MySmart City Indicator: Water pollution
	Smart Street Lamp & Pole	total energy consumption, # lights	Violent crime rate per 100,000 inhabitants, traffic fatalities	U4SSC: Violent crime rate, traffic fatalities, pedestrian infrastructure
	Panic button (SS Bus Stop, Smart Pole)	# buttons, response time	Violent crime rate per 100,000 inhabitants, traffic fatalities	U4SSC: Violent crime rate, traffic fatalities, pedestrian infrastructure
	Blockchain (for halal and ID)	# applications adopting blockchain	# patents	U4SSC: Patents
	Smart WiFi 3.0	# hotspots	# public wifi hotspots	U4SSC: WiFi in public area
	SSDP - IoT Platform	# devices connected, # entities, # datasets	# ICT sector employee	U4SSC: ICT sector employment
Smart Government (20%)	CEPat - Gov services	# users, # transactions by type by PBT	# public services delivered electronically	U4SSC: e-government
	Digital Gov Approval Platform	# services, # users, approval time	# public services delivered electronically	U4SSC: e-government
	Moments of Life	# services	# public services delivered electronically	U4SSC: e-government
	Centralised Gov Procurement	# products, # transactions	% of procurement conducted electronically	U4SSC: Public Sector e-procurement
	Digital ID	# participants	# public services delivered electronically	U4SSC: e-government
	Disease Monitoring & Epidemic Management	hotspots, response time	# open datasets published	U4SSC: Open data
	Digitalisation of Water Supply Operations	# annual NRW	% water loss in distribution system	U4SSC: Water supply loss
	Smart Selangor Command Centre	response time	Violent crime rate per 100,000 inhabitants, traffic fatalities	U4SSC: Violent crime rate, traffic fatalities, pedestrian infrastructure
	CCTV analytics	# events captured, response time	Violent crime rate per 100,000 inhabitants, traffic fatalities	U4SSC: Violent crime rate, traffic fatalities, pedestrian infrastructure
	ITMS	congestion levels (TTI)	% of streets monitored by ICT	U4SSC: Traffic monitoring
	C5i Operations Centre	# services monitored, response time	Violent crime rate per 100,000 inhabitants, traffic fatalities	U4SSC: Violent crime rate, traffic fatalities, pedestrian infrastructure
	Govt Digital Training (Agile, Tech)	# officers trained, # training program	# officers trained	Singapore Digital Gov
	CoE - Govt Hackathon	# new applications	# patents	U4SSC: Patents
	SSDP - ML, AI, BDA, Dashboards	cloudwatch metrics, # datasets	# open datasets published	U4SSC: Open data
	Smart Topography	# participants	# public services delivered electronically	U4SSC: e-government
	Cybersecurity Unit	# secured online services (central security policy)	# ICT sector employee	U4SSC: ICT sector employment
	Smart Waste Disposal Methods	# non-landfill disposal projects deployed	% of solid waste disposal methods	U4SSC: Solid waste treatment
Smart Economy (10%)	Cashless	# businesses adopting cashless	# public services delivered electronically	U4SSC: e-government
	Smart Factory 4.0	# participants	# ICT sector employee	U4SSC: ICT sector employment
	Tech Start Up & Accelerator Program	# startups (GovTech, FinTech, MedTech)	# ICT sector employee	U4SSC: ICT sector employment
	AWS Academy	# participants, # programmes	# ICT sector employee	U4SSC: ICT sector employment
	Food Price Monitor	# items monitored	# public services delivered electronically	U4SSC: e-government
	Industry Data Platform	# companies	# open datasets centrally shared	U4SSC: Open data
	SME Platform & Marketplace	# SME, # products	% of SME	U4SSC: SME
	CEPat & Marketplace & e-wallets	# services, # partners, # users	# public services delivered electronically	U4SSC: e-government
	COOL - POI, Tourism	# users, # active uploads	% of labour in tourism	U4SSC: Tourism sector employment
	COOL - e-UPAH	# users, # active uploads	Access to finding online employment services	IMD-SUTD: Ease of finding jobs online
	Talent Open Marketplace for Gig Economy	# users	Access to finding online employment services	IMD-SUTD: Ease of finding jobs online
	AWS SCALE	# SME , # programmes	% of SME	U4SSC: SME
	Precision Agriculture	# farmers, # crops, yields	% food locally produced	U4SSC: Local food production
	CoE - Gov Business Hacks	# site # new applications	# patents	U4SSC: Patents
	SSDP - Open Data	# new applications	# patents	U4SSC: Patents
	Future Economy Committee	# briefs to MTES	# ICT sector employee	U4SSC: ICT sector employment
Smart Community (10%)	COOL - Announcement, News	# news uploaded, # users	# public services delivered electronically	U4SSC: e-government
	COOL - IPR Module	# users	# public services delivered electronically	U4SSC: e-government
	COOL - Wellness (Parks POI, Lakes POI)	# participants, # users, # uploads	% citizens with access to parks	U4SSC: Green area
	COOL - Healthcare Module	# participants, # users	Satisfaction of online healthcare services	IMD-SUTD: Online healthcare services
	SITS	# users	% of urban public transport data in real-time	U4SSC: Dynamic public transport information
	Smart Selangor Parking	# users	apps providing parking guidance to users	IMD-SUTD: Parking guidance apps
	Tap to Ride	# users	% people using public transport	U4SSC: Transportation mode share
	iRS (potholes, road issues, faulty traffic lights)	# potholes patched, # operational traffic lights, response time	# public services delivered electronically	U4SSC: e-government
	IDRS	# disaster managed, response time	# public services delivered electronically	U4SSC: e-government
	Smart Selangor Safe City Concept (VSP app, sr	# registered users, % safe walkways, # smart poles	Violent crime rate per 100,000 inhabitants, traffic fatalities, pedestrian walkways	U4SSC: Violent crime rate, traffic fatalities, pedestrian infrastructure
	AWS Educate	# participants, # programmes	# ICT sector employee	U4SSC: ICT sector employment
	Smart Selangor Digital Literacy Initiative	# participants, # programmes	# ICT sector employee	U4SSC: ICT sector employment
	IoT School & i-station	# participants, # programmes	# ICT sector employee	U4SSC: ICT sector employment
	Recycling App - Recycle & Barter	amount recyclables by type by PBT, # users	% of solid waste recycled	U4SSC: Solid waste treatment
	COOL - Citizen Reporting	response time	# public services delivered electronically	U4SSC: e-government
	Public Bike Share	# users, bike locations	# shared bicycles	U4SSC: Shared bicycles

Table 10.1 (a): SSAP initiatives, annual success indicators and international equivalent smart city indices

10.2 Mapping SSAP Initiatives Back to SSAP Objectives

Domains	Outcomes	Initiatives	Productivity	Liveability	Environment
Smart Digital Infrastructure (35%), 1 outcomes	Develop, installed and operationalise	SeGNeT			
	Develop, installed and operationalise	SSDC			
	Develop, installed and operationalise	Air Quality Indicator			
	Develop, installed and operationalise	CCTV			
	Develop, installed and operationalise	SS Bus Stop			
	Develop, installed and operationalise	Raw Water Quality Indicator			
	Develop, installed and operationalise	Smart Street Lamp & Pole			
	Develop, installed and operationalise	Panic button (SS Bus Stop, Smart Pole)			
	Develop, installed and operationalise	Blockchain (for halal and ID)			
	Develop, installed and operationalise	Smart WiFi 3.0			
	Develop, installed and operationalise	SSDP - IoT Platform			
Smart Government (20%), 3 outcomes	Easy to deal with	CEPat - Gov services			
	Easy to deal with	Digital Gov Approval Platform			
	Easy to deal with	Moments of Life			
	Easy to deal with	Centralised Gov Procurement			
	Easy to deal with	Digital ID			
	Responsive	Disease Monitoring & Epidemic Management			
	Responsive	Digitalisation of Water Supply Operations			
	Responsive	Smart Selangor Command Centre			
	Responsive	CCTV analytics			
	Responsive	ITMS			
	Responsive	C5i Operations Centre			
	Fit for Digital Age	Govt Digital Training (Agile, Tech)			
	Fit for Digital Age	CoE - Govt Hackathon			
	Fit for Digital Age	SSDP - ML, AI, BDA, Dashboards			
	Fit for Digital Age	Smart Topography			
	Fit for Digital Age	Cybersecurity Unit			
	Fit for Digital Age	Smart Waste Disposal Methods			
Smart Economy (10%), 3 outcomes	Digitalise	Cashless			
	Digitalise	Smart Factory 4.0			
	Digitalise	Tech Start Up & Accelerator Program			
	Digitalise	AWS Academy			
	Digitalise	Food Price Monitor			
	Digitalise	Industry Data Platform			
	Develop	SME Platform & Marketplace			
	Develop	CEPat & Marketplace & e-wallets			
	Develop	COOL - POI, Tourism			
	Develop	COOL - e-UPAH			
	Develop	Talent Open Marketplace for Gig Economy			
	Initiate	AWS SCALE			
	Initiate	Precision Agriculture			
	Initiate	CoE - Gov Business Hacks			
	Initiate	SSDP - Open Data			
	Initiate	Future Economy Committee			
Smart Community (10%), 3 outcomes	Livable	COOL - Announcement, News			
	Livable	COOL - IPR Module			
	Livable	COOL - Wellness (Parks POI, Lakes POI)			
	Livable	COOL - Healthcare Module			
	Livable	SITS			
	Livable	Smart Selangor Parking			
	Livable	Tap to Ride			
	Livable	iRS (potholes, road issues, faulty traffic lights)			
	Livable	IDRS			
	Livable	Smart Selangor Safe City Concept (VSP app, smart pole, safe walkways)			
	Digitally Literate	AWS Educate			
	Digitally Literate	Smart Selangor Digital Literacy Initiative			
	Digitally Literate	IoT School & i-station			
	Environmental	Recycling App - Recycle & Barter			
	Environmental	COOL - Citizen Reporting			
	Environmental	Public Bike Share			

Table 10.2 (a): SSAP Initiatives Mapped Back to SSAP Objectives.

The mapping in Table 10.2 (a) shows that all of the SSAP initiatives are going to deliver (green coloured boxes) the 'improved economic productivity' and 'liveability' objectives while environmental sustainability is also quite significantly addressed by the 62% of the SSAP initiatives.

11.0 Summary

The SSAP is an update to the 2016 Smart Selangor 2016 blueprint to include digital technology initiatives that form the basis of a modern forward-looking Smart State in Selangor. The SSAP is a 6-year action plan of initiatives to be carried out from 2020 to 2025 that specifies focus areas of the Smart Selangor Smart State programme by leveraging cutting-edge digital technologies to improve public services and the living experience of Selangor citizens.

In essence, Smart Selangor has initiatives that promotes a greener and safer urban environment, better mobility with cleaner water and efficient digital public services. Smart Selangor Initiatives also provide an avenue for more resilient economic opportunities for entrepreneurs and SMEs. These initiatives are supported by future digital technologies, such as cloud technologies, blockchain and the Internet of Things (IoT) that provide a technical framework to implement future sustainable smart state projects.

There are planned smart cities to be implemented, very often at the local municipal level but there are very few plans that fit our scale, which is at the state level. Smart Selangor initiatives, when it was introduced in 2016, had embarked on an exciting journey and will become a success story of perseverance, forward-looking ideas that resulted from continuous government and private sector collaborations in delivering a liveable smart state. The following diagram summarises key facts of the SSAP 2025:

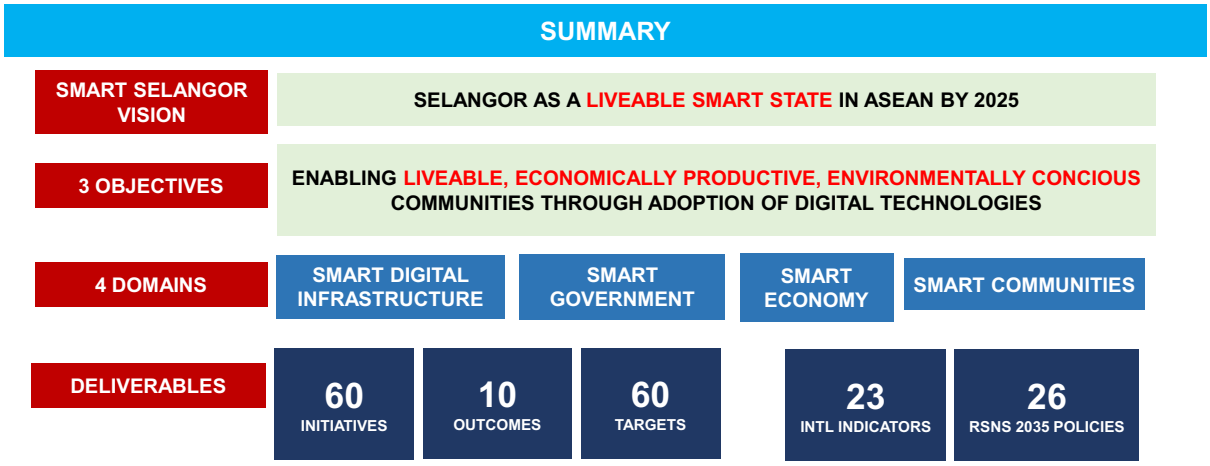


Diagram 11.0 (a): Smart Selangor Action Plan 2025 Summary

The overall SSAP 2025 domains, initiatives, objectives addressed and what specific initiative intends to deliver by 2025 are listed in Table 11.0 (a). This table details the domains, its outcomes and impact of each initiative by 2025. Some impactful key narratives from the SSAP 2025 objectives can be summarised as follows:

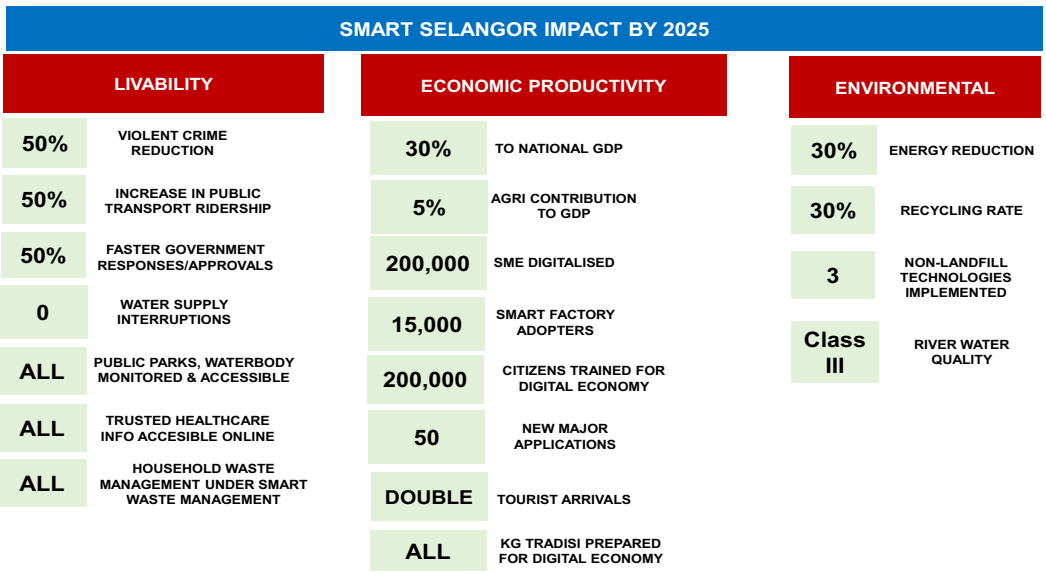


Diagram 11.0 (b): Smart Selangor Action Plan 2025 Key Narratives

Domains	Outcomes	Initiatives	2025 Success Indicators	Productivity	Liveability	Environment
Smart Digital Infrastructure (35%), 1 outcomes	Develop, installed and operationalised	SeGNeT	48 state entities connected on Gigabit Network			
	Develop, installed and operationalised	SSDC	48 state entities connected on Tier 4 ready Data Centre			
	Develop, installed and operationalised	Air Quality Indicator	Air Pollution source gets identified within 2 hours of detection			
	Develop, installed and operationalised	CCTV	1,000 new units installed			
	Develop, installed and operationalised	SS Bus Stop	15 units installed with 400 daily visitors			
	Develop, installed and operationalised	Raw Water Quality Indicator	Class III water quality in installed sites			
	Develop, installed and operationalised	Smart Street Lamp & Pole	100,000 units, 30% power savings			
	Develop, installed and operationalised	Panic button (SS Bus Stop, Smart Pole)	1,000 units, help arrives < 5 mins			
	Develop, installed and operationalised	Blockchain (for halal and ID)	5 major applications			
	Develop, installed and operationalised	Smart WiFi 3.0	2.000 strategic hotspots, 10Mbps/user, unlimited data			
	Develop, installed and operationalised	SSDP - IoT Platform	100,000 devices connected, 50 datasets			
Smart Government (20%), 3 outcomes	Easy to deal with	CEPat - Gov services	All paid government services on 1 platform			
	Easy to deal with	Digital Gov Approval Platform	Application time halved from 2020			
	Easy to deal with	Moments of Life	All citizen life-related services available on mobile			
	Easy to deal with	Centralised Gov Procurement	All state & PBT digital services and products procured centrally			
	Easy to deal with	Digital ID	Digital ID rolled out (Single Sign On Govt Services)			
	Responsive	Disease Monitoring & Epidemic Management	Response time halved from 2020			
	Responsive	Digitalisation of Water Supply Operations	25% NRW			
	Responsive	Smart Selangor Command Centre	Assistance response time < 2 hours			
	Responsive	CCTV analytics	50 events auto detection (Safety, Traffic, Violations)			
	Responsive	ITMS	Traffic congestion remote monitoring of all major roads			
	Responsive	C5i Operations Centre	50 services monitored. Response time halved from 2020			
	Fit for Digital Age	Govt Digital Training (Agile, Tech)	1,000 officers trained			
	Fit for Digital Age	CoE - Govt Hackathon	10 new applications			
	Fit for Digital Age	SSDP - ML, AI, BDA, Dashboards	Centralised digital map, 150 datasets			
	Fit for Digital Age	Smart Topography	Centralised digital map (above & underground elements)			
	Fit for Digital Age	Cybersecurity Unit	All state digital services has Central Security Policy implemented			
	Fit for Digital Age	Smart Waste Disposal Methods	3 major non-landfill disposal technologies implemented			
Smart Economy (10%), 3 outcomes	Digitalise	Cashless	10,000 businesses			
	Digitalise	Smart Factory 4.0	15,000 new adopters			
	Digitalise	Tech Start Up & Accelerator Program	300 new tech startups (GovTech, EdTech, FinTech)			
	Digitalise	AWS Academy	20,000 professionals re-skilled			
	Digitalise	Food Price Monitor	All wet food prices online			
	Digitalise	Industry Data Platform	5,000 companies			
	Develop	SME Platform & Marketplace	25% of Selangor SME digitalised			
	Develop	CEPat & Marketplace & e-wallets	All major e-wallets on CEPat, cross wallet marketplace enabled			
	Develop	COOL - POI, Tourism	Tourist arrivals doubles from 2020			
	Develop	COOL - e-UPAH	All 371 traditional villages connected			
	Develop	Talent Open Marketplace for Gig Economy	10,000 active users			
	Initiate	AWS SCALE	5,000 SME trained			
	Initiate	Precision Agriculture	Agri contribution to GDP at 5%			
	Initiate	CoE - Gov Business Hacks	10 new applications			
	Initiate	SSDP - Open Data	25 new applications			
	Initiate	Future Economy Committee	State has forward looking medium to long term economic plan			
Smart Community (10%), 3 outcomes	Livable	COOL - Announcement, News	Trusted online information source			
	Livable	COOL - IPR Module	All IPR on COOL			
	Livable	COOL - Wellness (Parks POI, Lakes POI)	20% reduction in mental cases from 2020			
	Livable	COOL - Healthcare Module	All healthcare sites info, incl NGO on app			
	Livable	SITS	Annual bus ridership up 50% from 2020			
	Livable	Smart Selangor Parking	3 million users			
	Livable	Tap to Ride	Available on all Smart Selangor bus			
	Livable	iRS (potholes, road issues, faulty traffic lights)	Repair SLA 5 days at > 95% repair efficiency			
	Livable	IDRS	Assistance response time < 2 hours			
	Livable	Smart Selangor Safe City Concept (VSP app, smart pole, safe walkways)	Violent crime rate reduction by 50% from 2020			
	Digitally Literate	AWS Educate	200,000 students trained			
	Digitally Literate	Smart Selangor Digital Literacy Initiative	Rural online activities increased by 50% from 2021, 5000 trainees			
	Digitally Literate	IoT School & i-station	500 participants, 5 programmes			
	Environmental	Recycling App - Recycle & Barter	Recycling rate at 30%			
	Environmental	COOL - Citizen Reporting	Response time < 0.5hr of report			
	Environmental	Public Bike Share	200,000 bikes			

Table 11.0 (a): Summary of SSAP 2025 Initiatives Impact by 2025.

12.0 Appendix

PROPOSED INITIATIVES	CONCEPT	IMPLEMENTER	SOURCE OF FUNDING	PHASE (Discovery, Alpha, Beta, Live)
SMART DIGITAL INFRASTRUCTURE				
Smart Selangor Gigabit Network (SeGNet)	Multi-ring, gigabit network that connects all 48 government entities. This primarily powers the smart state applications, supports government operations and Free public WiFi	SSDU, PBT, TM, KKMM, SKMM, STANDCO Infrastructure and Public Facilities, Agricultural Modernization and Agro-based Industry.	Government/ Private/ Both	Alpha
Smart Selangor Data Centre (SSDC)	A hybrid cloud data centre internationally rated to Tier-4 ready. Can be used as primary or recovery data centres by government entities across the state	SSDU, PBT, IPTA, IPTS, UPEN	Government	Alpha
Air Quality Indicator (AQI)	Permit multi-standard, multi-protocol, affordable, easily sourced, compatible with typical IoT or Narrowband IoT connectivity solutions. Device will be application specific, but compatible on SSDP IoT platform	SSDU, PBT, JAS, PDT, STANDCO Environment, Green Technology, Science, Technology and Innovation	Government	Beta
Close Circuit Centralised TV (CCTV)		SSDU, PDRM, PBT, STANDCO Infrastructure and Public Facilities, Agricultural Modernization and Agro-based Industry	Government	Alpha
Smart Bus Stop		SSDU, PBT, STANDCO Public Transportation	Government	Live
River Water Quality Sensors		SSDU, JPS, JPBD, LUAS, JAS, STANDCO Environment, Green Technology, Science, Technology and Innovation	Government, Air Selangor	Alpha
Smart Street Lamp & Pole		SSDU, PBT, JKR, STANDCO Infrastructure and Public Facilities, Agricultural Modernization and Agro-based Industry	Government	Alpha
Panic button		SSDU, PBT	Government	Beta
Blockchain	Application of traceability technologies like blockchain or QR codes to ensure traceability of agriculture products from farm to table	SSDU, PBT, Agriculture Department, STANDCO Infrastructure and Public Facilities, Agricultural Modernization and Agro-based Industry	Public-private partnership	Not Started
Smart WiFi 3.0	The Free Public WiFi with minimum 10Mbps access per user has to have a sustainable funding model 2 years after implementation	SSDU, PBT, PDT, TM, Invest Selangor Berhad UPEN, STANDCO Infrastructure and Public Facilities, Agricultural	Public-private partnership	Discovery

		Modernization and Agro-based Industry		
Smart Selangor Digital Platform (SSDP) - IoT Platform	Government owned IoT platform for IoT sensors and sensor data collection	SSDU, PDT, MIDA, PBT, UPEN, Invest Selangor Berhad, STANDCO Investment, Industry and Trade, Small and Medium Industries	Government	Alpha
SMART GOVERNMENT				
Citizen E-Payments App (CEPat)	Single application for all paid government services at various levels	SSDU, PBT, UPEN	Government	Beta
Digital Government Approval Platform	Single digital window (application/website/platform) to apply government approvals and to monitor status of application. Government online business permit application and licensing, including digital queuing systems for offices	SSDU, PBT, PDT, UPEN, STANDCO Investment, Industry and Trade, Small and Medium Industries	Government	Not Started
Moments of Life	Trusted processes on essential government services presented as moments within individual's life	SSDU, State Health agency, KKM, PDRM, PBT, PDT	Government	Not Started
Centralised Government Digital Procurement	Centralised procurement for IT for all levels of government to ensure consistency of specification and reduce cost	SSDU, PBT, PDT, UPEN	Government	Discovery
Digital ID	Single citizen digital identification for every citizen to login to all government services at all levels	SSDU, JPN, PBT	Government	Not Started
Disease Monitoring & Epidemic Management	System that collects data on diseases and locations within the state. Will be used to assist multi-agency coordination efforts in the state	SSDU, State Health Agency, KKM	Public-private partnership	Discovery
Digitalisation of Water Supply Operations	An initiative to complement state water management agencies to reduce water shortages, interruption and quality.	SSDU, LUAS, JPS, PBT, JAS	Public-private partnership	Not Started
Smart Selangor Command Centre	A collaborative, command, control, computerised centre	SSDU, Smart Disaster Management Unit (UPB),	Government	Live

	for centralised crisis management and critical operations monitoring			
CCTV analytics	A central analytical engine that analyses feeds from CCTVs across state and triggers known crime, illegal or traffic safety violations	SSDU, PDRM, PBT	Government	Alpha
Intelligent Traffic Monitoring System (ITMS)	Centralised traffic congestion monitoring with some adaptive traffic light controls	SSDU, PBT, JKR	Government	Alpha
Selangor C5i Intelligent Operations Centre (SIOC C5i)	A centralised multi-agency state command centre that collects and projects operational data from across the state with relevant incidents can be responded to quickly	SSDU, PBT, PDRM, JBPM, UPB	Government	Alpha
Government Digital Training (Agile, Tech)	Personnel development programme to build technical (coding, BDA) and cultural skills (design thinking & agile scrum)	SSDU, PBT, Higher Education Institutes, UPEN	Public-private partnership	Not Started
Centre of Excellence (CoE) - Government Hackathon	Regular digital innovation competition (hackathons) within government or with private sectors to explore new government solutions	SSDU, PBT, UPEN, Private sectors	Public-private partnership	Alpha
Smart Selangor Digital Platform (SSDP) - Machine Learning (ML), Artificial Intelligence (AI), Big Data Analytics (BDA), Dashboard	Central data platform that stores operations data, enables big data analytics, connects all levels of government entities and digital services, enables application development from data. Powered by a reliable, scalable digital infrastructure with good security This initiative also includes a centralised digital map database that includes topology and utility lines	SSDU, PBT, PDT, UPEN, other related state agency	Government	Alpha
Smart Topography		SSDU, PBT, JUPEM, SELGEM	Government	Discovery
Cybersecurity Unit	A centre that monitors state cybersecurity infrastructure, develops policies and	SSDU, PDRM, PBT, SKMM, KKMM	Goverment	Not Started

	protocols against internal and external cyber threats			
Smart Waste Disposal Methods	Non-landfill waste disposal methods to be implemented in state with data presented into SSDP	SSDU, PBT, JAS, UPEN, KeTTHA, KDEB	Public-private partnership	Not Started
SMART ECONOMY				
Cashless	Programs to encourage local businesses & citizens to adopt cashless transactional methods	SSDU, PBT, UPEN, ISB, private sectors	Government	Live
Smart Factory 4.0	Affordable solutions from government for SMEs to adopt IR 4.0 tools and practices, either through co-development with the wider SME community or to develop internal capabilities collaboratively	SSDU, PBT, Hijrah Selangor, private sectors	Public-private partnership	Discovery
Selangor Tech Start Up & Accelerator Program	Training and funding programs for selected tech start-ups incubation and acceleration	SSDU, UPEN, Higher Education Institutes	Public-private partnership	Beta
AWS Academy	Centralised Cloud and Big Data Analytics training for selected civil servants, academia, citizens and businesses	SSDU, PBT, Higher Education Institutes, UPEN	Public-private partnership	Alpha
Food Price Monitor	Real-time price information of transacted food items	SSDU, related government & private sectors	Public-private partnership	Discovery
Industry Data Platform	Government managed central database of industry producers, consumers with data sharing API's	SSDU, PBT, Hijrah Selangor, UPEN	Public-private partnership	Not Started
SME Platform & Marketplace	Platform for SME marketplace, logistics and SME performance monitoring	SSDU, PBT, Hijrah Selangor, private sectors	Public-private partnership	Alpha
CEPat & Marketplace & e-wallets	Programs to encourage local businesses & citizens to adopt cashless transactional methods	SSDU, Hijrah Selangor, PBT	Public-private partnership	Beta
Communities Online (COOL) - POI, Tourism	Tourism products ecosystem based on local crowdsourcing of information and photos	SSDU, PBT, UPEN, all Exco office, Tourism Selangor	Public-private partnership	Alpha
Communities Online (COOL) - e-UPAH	A platform for local communities to share services and skills to	SSDU, PBT, STANDCO Entrepreneur Development, Rural Development, Rural and Traditional Village,	Public-private partnership	Discovery

	enable 'gig economy' in rural communities	STANDCO Socio-Economic Empowerment		
Talent Open Marketplace for Gig Economy	Online tech & art skills marketplace for citizens local and global	SSDU, Higher Education Institutes, private sectors	Public-private partnership	Not Started
AWS Smart Selangor Cloud Accelerator Learning Programme (SCALE)	Centralised Cloud and Big Data Analytics training for selected civil servants, academia, citizens and businesses	SSDU, PBT, UPEN, PDT, Higher Education Institutes, private sectors	Public-private partnership	Alpha
Precision Agriculture	Use of tech and data-driven agriculture systems for higher yield and shorten time to market for agro products	SSDU, State Agriculture Department	Public-private partnership	Discovery
Centre of Excellence (CoE) - Government Business Hackathon	State-wide physical collaborative centres for government/academia/ industry to synthesize new solutions and showcase viable products for public testing	SSDU, PBT, UPEN, PDT, Higher Education Institutes, Private sectors	Public-private partnership	Beta
Smart Selangor Digital Platform (SSDP) - Open Data Development Environment	Platform that provides selected data which is made to be open. Functionalities include data visualiser, idea proposition section and application development environment	SSDU, PBT, UPEN	Public-private partnership	Alpha
Future Economy Committee	Committee to determine future industries with strategic benefits to state. Conducts trend research, build economic resilience models through continuous engagement with local and foreign industries	SSDU, PBT, UPEN	Government	Not Started
SMART COMMUNITY				
Communities Online (COOL) - Announcement, News	Real-time, updated community-related information sharing such as public transportation or travel information, announcements, events, emergency help centres, surveys within and between communities	SSDU, PBT, UPEN, all Exco office	Government	Live
Selangor Intelligent Transport System (SITS)		SSDU, PBT, private sectors,	Government	Live

Communities Online (COOL) - IPR Module	Application that lists current incentives for citizens and allows eligibility checking through mobile devices	SSDU, UPEN, STANDCO Health, Welfare, Women and Family Empowerment, STANDCO Housing and Urban Life	Government	Live
Communities Online (COOL) - Wellness (Parks POI, Lakes POI)	Tools that share location information of public parks, licensed, trusted local services or health & wellness centres such as clinics, hospitals, pharmacies to gyms or traditional medical practitioners	SSDU, PBT, UPEN, STANDCO Tourism, Tourism Selangor	Government	Discovery
Communities Online (COOL) - Healthcare Module		SSDU, State Health Agency, KKM	Government	Discovery
Smart Selangor Parking (SSP)		SSDU, PBT, UPEN, private sectors	SSDU, Government	Live
Tap to Ride	Charged ultra-reliable public bus service	SSDU, PBT, Prasarana, private sectors,	SSDU, Government	Alpha
iRS	Multi-stakeholder WAZE-based system for road potholes report management	SSDU, JBPM, PDRM, PBT, UPB	Public-private partnership	Live
IDRS	WAZE-based disaster reporting management system	SSDU, JBPM, PDRM, PBT, UPB	Public-private partnership	Live
Smart Selangor Safe City Concept (VSP app, smart pole, safe walkways)	Create local citizen ‘safe havens’ with CCTV links to C5i SIOC	SSDU, PBT, PDRM, JBPM, UPB	Public-private partnership	Alpha
AWS Educate	Cloud computing introduction to students of higher learning	SSDU, Higher Education Institutes	Public-private partnership	Live
Smart Selangor Digital Literacy Initiative	Digital empowerment programmes covering vulnerable communities such as special needs, elderly, rural residents to enable them to go online confidently	SSDU, PBT, Higher Education Institutes,	Public-private partnership	Not Started
IoT School & i-station	Training programmes on the use of robotics and IoT, basic coding	SSDU, PBT, Higher Education Institutes	Public-private partnership	Live
Recycling App - Recycle & Barter	A local marketplace for bartering free spare goods or free services. Tools that share location information of local waste recycling centres, recycling and composting programs, nature and environmental monitoring	SSDU, KDEB, PBT, JAS, KeTTHA	Public-private partnership	Discovery
Communities Online - Citizen Reporting Module	Single trusted application for government to obtain crowdsourced	SSDU, PBT, UPEN, PDRM, UPB, JBPM, YB Exco office	Government	Live

	information from citizens. Strengthen community safety by relaying real-time suspicious criminal activities or traffic violations to community heads or state command centres			
Public Bike Share	Public bicycle sharing programmes including dedicated bicycle lanes	SSDU, PBT, JKR, UPEN, private sectors	Public-private partnership	Discovery

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