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AUSTRALIA
SMART CITIES
TRUST FUND
Asian Development Bank



Australian Government
Department of Foreign Affairs and Trade

ADB

SMART CITIES Guided Learning Programme

Home Exercise 1

ASEAN Australia Smart Cities Trust Fund (AASCTF)

September 2022

Begin
Home
Exercise

Guided Learning Programme



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BEFORE YOU CONTINUE...

Please download this file onto your computer or mobile device before working on this exercise to avoid overwriting the original file.

Instructions on how to submit your finished work will be provided at the end of this document.

If you encounter any issues with this exercise, please contact Kristine Lucero at kjl@ramboll.com or via WhatsApp/Telegram at +639171702953.

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Welcome

Guided Learning Programme

The key to unlocking a smart livable city is data management.

Most cities today generate ample amounts of data from services and operations that power the function of a city; however, this data is not maximized enough to inform urban planning and decision-making.

The growing concern about data privacy and security also hampers the use of digital systems and data collection.

What can cities do to ensure these vital information are not wasted? How can data governance be improved, and how can it lead to more livable cities?

These are some of the questions that will be addressed in the Guided Learning Programme (GLP) of the ASEAN Australia Smart Cities Trust Fund (AASCTF)

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The programme structure

This programme is aimed at professionals who are starting their journey working with **urban data** and will be responsible for planning data projects in their city.

The programme consists of three webinars with supplementary coursework to be completed by the specific deadline. You are now to begin the first home exercise.

Home Exercise 1



Data Collection and Storage



Home Exercise 2



Data Governance and Security



Home Exercise 3



Data Analysis and Decision Making



Home Exercise 1



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Home Exercise 1 – Data Collection and Storage

The first home exercise in the series is called 'Data Collection and Storage'. In this exercise, we will address the questions of why collecting data is valuable for cities, how to collect data, and where the data goes.

We kindly ask you to reflect on the questions being asked in the home exercise. Note that the output of the course will be for you to have developed a basic urban data project proposal.

<p>Home Exercise 1</p>  <p>Data Collection and Storage</p>	
<p>Home Exercise 2</p>  <p>Data Governance and Security</p>	
<p>Home Exercise 3</p>  <p>Data Analysis and Decision Making</p>	

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Home Exercise 1



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Types of slides

This home exercise is composed of three types of content: Warmups, activities and reflections.

They are labeled as noted on this slide on the left side bar of each section.



EXAMPLE
WARMUP

Slides featuring this panel contain a warm-up activity to help you draw connections between the big ideas of each lesson and your own life



EXAMPLE
ACTIVITY

Slides featuring this panel contain the main activity of each lesson in which you will apply the tools and strategies from the course to real-life experiences



EXAMPLE
REFLECT &
SUBMIT

REQUIRED
SUBMISSION

Slides featuring this panel contain the final reflection activity of each lesson. You will submit your answers from any slides tagged with the red submission button.

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Welcome

Home Exercise 1

In this home exercise, you will be introduced to the importance of developing use cases to define data collection to improve urban living, as well as the barriers that cities face in collecting and storing urban data.

You will be introduced to actual methods for collecting data and the key steps in use case development

Type: Training

Module length: 60 min

[Start Home Exercise](#)



Smart Livable Cities

With cities continuing to grow and citizens' expectations increasing, we need to rethink how cities are built and managed. We need to focus on people's needs, development processes, and how new technology can make our cities function better.

In recent years, the notion of the 'smart city' has become a well-developed narrative and a global pursuit.



In this course we define a 'smart city' as a 'livable city'

"Livability" is a term often used to describe the quality of life and community well-being, supported by strong governance systems and practices. Although definitions vary, at the heart of the envisioned transformation toward a livable city is an integrated planning approach to the provision of infrastructure and services and other public goods. This is based on economic competitiveness, environmentally sustainable growth, social and financial inclusion, and resilience.

A smart livable city is green, inclusive, competitive, and resilient. The more these high-level objectives are embedded within smart city strategies to provide necessary guidance to intelligent decision-making around planning systems, service delivery and financial management, the smarter the city becomes.



Main trends driving smart cities

Data is rapidly transforming our world. Cities in particular are giant data machines – creating, consuming, and capturing vast amounts of data through various systems embedded in the functioning of different services and institutions.

To understand the growth of smart cities, or the smart city strategies being set in place across the globe, let's look at two main trends for smart cities.



Technology Maturity



Increasingly, the technologies that are available to us are mature, whereby they strongly influence and impact our daily lives and the functioning of societies on a global scale.

More cities are starting to develop or adopt national and/or city-level smart strategies and participate in smart city networks and global alliances to drive smart city initiatives forward.



Governance



INTRODUCTION WARMUP

TIME: 5 minutes

REQUIRED
MATERIALS: None

What Are Your Goals with this Course?

Overview

Reflect on why you are taking this course.

Here are some examples:

- *To be able to effectively lead a team through complex urban data projects in my team*
- *To be able to understand how to discover urban challenges in my city*
- *To be able to engage in a process to find viable solutions utilizing urban data*
- *To be able to develop viable implementation of a smart solution to test use cases*
- *To be able to document and provide insights from pilot projects*
- *To identify, users and use cases for smart cities using urban data*

My motivation with this course is:

Type your answer here...



Information and Technology Communications Infrastructure

Today, telecommunications are vital in a modern urban environment. Most cities believe, and many require, universal access to telecommunications and almost all aspire to high-speed Internet access. Information and Technology Communications (ICT) infrastructure is an enabling layer to any smart city. Our increasingly connected, digital world is creating enormous volumes of data. Every computer, every smartphone, machines in factories, cars, sensors, and social networks— all generate data.

The data is generated in daily activities, whether business or pleasure. Sometimes, there are also requests for data for academic research, media outlet use, litigation, or other uses like analytics that help and form city decisions. On occasion, systems consume the data for another purpose other than its original use. For example, data collected that is required for sending electrical bills to customers can be used later through another provider to help homeowners make form decisions and how they are using power in their homes. Data that is reused for other purposes makes it more valuable. In fact, repurposing city data is a remarkable way to inspire and power urban innovation. Many cities provide apps for their citizens to report issues. This includes reporting such items as potholes, street light outages, graffiti, and code violations. Let's look at an example of how visualizing data collected can help with improving city operations. Now we're able to get a real sense of city challenges.





What is urban data?

As smart cities develop, the need to collect, manage and analyse data will accelerate. Many devices are already collecting massive amounts of data in cities, data-collecting devices, such as sensors, metering, video cameras, and others, as well as the information collected from the devices integrated in a city's services, systems, and processes.

The types of data that can be gathered include, but are not limited to, environmental data, such as air quality, temperature, humidity; operational status of urban systems, such as energy consumption and waste production; and behavioural data, such as population movements, traffic patterns, and criminality (e.g., vandalism and theft).

With cities using more technology to run systems that range from power grids to traffic lights, and from libraries to public safety record systems, cities and their governments are collecting what seems like exponential volumes of new data every month. As we'll discuss later, as cities use more devices to manage their operations, the movement and management of data between these devices becomes really important.



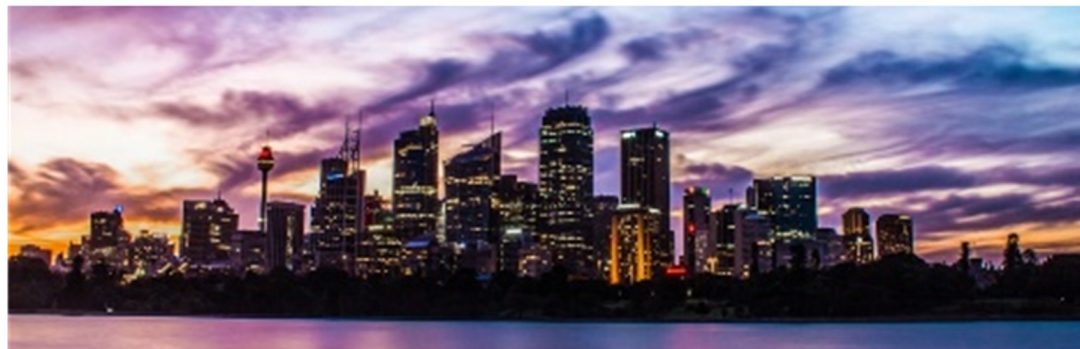


Develop a Smart City Vision

An important first step for cities to become smart is to develop sound visions and strategies to guide their subsequent interventions and prioritization of such. The starting point for many cities is to build on work already underway in the city and leverage the thinking and vision already in place.

Cities with a clear and actionable smart city vision, strategy and/or plan are more likely to avoid implementing ill planned and undesirable standalone or siloed interventions.

A smart city strategy or plan is a necessity to create clarity on the succession of investments to secure synergy and multi-functionality where possible. Such visions, strategies, or plans must be multi-disciplinary and diverse in the voices and expertise that they include to be considered smart.





Asian Development Bank Smart City Analytical Framework

Once a holistic smart city strategy is in place the city can get to work utilizing data and technology intelligently (i.e., smart solutions) to drive systems-informed decision-making in order to ultimately achieve livable urban ecosystems where people and nature prosper.

Given the variety and complexity of smart city initiatives, an analytical framework to assess, design, and implement a smart city concept in specific contexts in Asia and the Pacific has been developed by ADB.

The framework is structured around high-level objectives, action fields, and enabling factors, in which digital maturity is implicitly reflected:

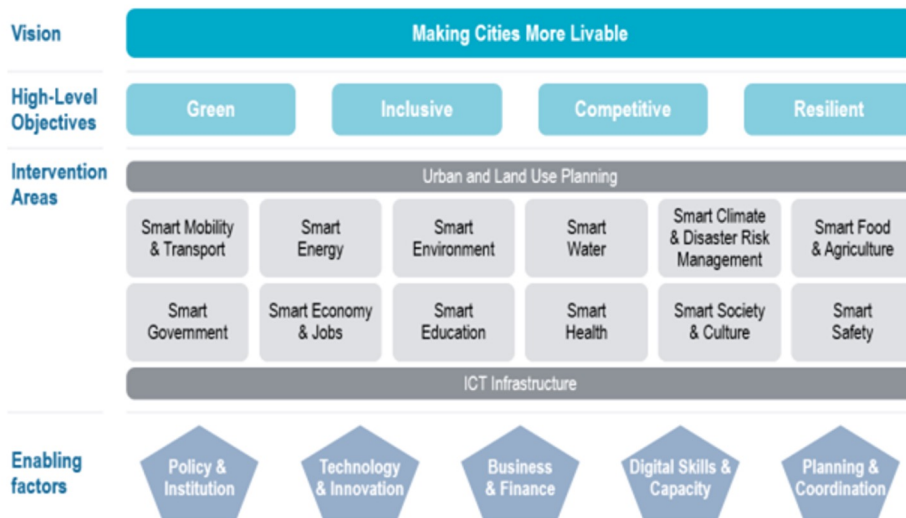
- **High-level objectives** define the desired outcome to be achieved, such as quality of life, economic growth, sustainability, resilience, and inclusiveness.
- **Enabling factors** represent crosscutting entry points for digital transformation, such as technology, policy, skills, business, and planning.
- **Action fields** pertain to areas where smart city solutions can be applied.

(Continued on next page)



Asian Development Bank Smart City Analytical Framework

Smart solutions (use cases) are thus identified and applied at the level of intervention areas (i.e., action fields). Smart solutions can be derived from within any one of the 14 (2 cross-cutting and 12 sectoral) action fields from ADB's Smart City Analytical Framework.





EXAMPLE ACTIVITY

TIME: 10 minutes

**REQUIRED
MATERIALS:** None

What is Your City's Smart City Vision?

Activity

We would like you to write your city's smart city vision. Your city might already have a smart city vision. If not, we would like you to state your own smart city vision for your city (theoretical only to be used in this exercise).

Examples:

- *To achieve a socially responsible, environmentally friendly and economically successful city whilst retaining the city's unique character.*
- *To be A World Class Sustainable city by 2025*

Tips in formulating a vision:

- *Think long-term*
- *Brainstorm what a big future outcome would look like. Chose the one that gains consensus*
- *Use simple words. Don't use jargon*
- *Make the statement inspiring*
- *Ensure that the entire vision statement is easy to understand*
- *Anyone should be able to have a common understanding of what's actually involved*
- *Consider making the statement time-bound. For example, use language such as "by 2030 ..."*
- *Involve many stakeholders*

Your city's smart city vision is

Type your answer here...



The Starting Point are the Citizens

New ideas, powered by technology, are positively changing how we move humans and products from one place to another; create and distribute energy, manage waste; combat the climate crisis; and improve basic city services through digitalization and the smart use of data.

The first step in creating a use case for a smart solution is to consider the users by conducting research about your users. This will help you to understand their attitudes towards technology and how they use technology. In this research, it is also important to look at your users' technology skill levels, their daily key activities (what do they do on a day to-day basis), what their needs are, and what they value most.

This information is brought together to make personas. These personas will be used as a key decision-making tool.





User Journeys

It's challenging to do a survey or a research project big enough to fully capture a whole city. So what we do is we try to supplement data with secondary resources such as citizen surveys to help us get better insights and then turn these insights into a user journey.

A user journey focuses on the users' activities, including pain points, their daily activities, and what they value. The key is to connect interactions and checkpoints with a development. And it's an opportunity to add value to the users' journey. It's also an opportunity for organizations or governments to ensure that the brand they want to convey to their users is reinforced.

What we could look at in a smart city is how we create affiliation and belonging in a city by using technology. Loneliness is one of the biggest problems now in modern cities. How can technology help to address that? It all starts with identifying key users (personas) and user journeys.





Summary of the User Journey Process

To recap, the key steps in creating a user journey is summarized below.



Identify Key Users



**Understand Wants, Needs
& Pains**



Map User Journey



EXAMPLE
REFLECT &
SUBMIT

REQUIRED
SUBMISSION

TIME: 20 minutes

REQUIRED
MATERIALS: None

Develop Your Own Use Case

Overview

Based on your smart city vision, understanding of key users, it is time to develop a smart city use case. This activity is the final in this home exercise.

STEP 1

Review the wants, needs and pain points from your user research to uncover potential opportunities

STEP 2

Ideate how technologies can help to realise the identified opportunities. It is important to focus on the 'how' rather than defining a specific technology at this phase. Spend 10 minutes having unrestricted brainstorming where you do not filter your ideas. It's better to have as many ideas as possible at this stage.

STEP 3

Select your top 3 ideas and conduct research (online/experts/etc.) on what work is being done in this area already. Do any of these projects solve your issue? Are there opportunities for collaboration where some adaptation or improvement would solve your problem? Are there no projects at all looking at your issue?

STEP 4

Pick the idea that you believe has the best potential to address the problems you uncovered for your persona. This will be the use case we take forward for the remainder of this course.

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Useful Resources

Here are some useful references that could help you as you develop your own use case:

Future Technology Trends

-<https://radar.envisioning.io/bladerunner2049/>

-<https://thevoroscope.com/2017/02/24/the-futures-cone-use-and-history/>

Value Proposition Creation

-www.strategyzer.com

Problem Research

-<https://sdgs.un.org/goals>

-<https://www.weforum.org/global-risks>



EXERCISE SUBMISSION

REQUIRED
SUBMISSION

Finished with this exercise?

Fill in the information below and follow the steps to submit you/your group's work:

<i>Name of Individual/ Group members:</i>	<input type="text" value="Type your answer here..."/>
<i>City:</i>	<input type="text" value="Type your answer here..."/>
<i>Country:</i>	<input type="text" value="Type your answer here..."/>

STEP 1: Finalize this file by adding your city and last name onto this PPT's file name using the following format:

GLP Exercise 1_[City]_[Your Last Name]
(Example: **GLP Exercise 1_Baguio_Lucero**)

STEP 2: Go to the [GLP Google Drive](#) and save your renamed file inside the folder named after your city.

NOTE: We also recommend that you also save an offline copy of this file on your computer in case of file syncing issues.

If you encounter any issues with uploading your work, please contact Kristine Lucero of the AASCTF team at kjl@ramboll.com or through WhatsApp or Telegram at +639171702953.

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Thank you for finalizing Home Exercise 1

Congratulation on finalizing the first home exercise of three in the ASEAN Australia Smart Cities Trust Fund's guided learning programme about urban data.

If you have any questions, please reach out to Andy.Brahney@ramboll.com

 Data Collection and Storage	
 Data Governance and Security	
 Data Analysis and Decision Making	



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PERSONA WORKSHEET

1.1 PROFILE

NAME:
 AGE:
 OCCUPATION:
 NATIONALITY:
 USER GROUP:
 CHARACTERISTICS OF YOUR USER GROUP:

1.2 BIBLIOGRAPHY

Please write a short bibliography about your persona (write as if you are the person)

1.3 IMAGE

Draw a picture of your persona

1.4 QUOTE

Please write a quote that characterizes your personas attitude towards the issue area you wish to investigate

2.1 GOALS

Write down what goals your persona has in relation to the issue area you wish to investigate

2.2 FRUSTATIONS

Write down what frustrations your persona has in relation to the issue area you wish to investigate

2.3 MOTIVATIONS

Please indicate what your persona is motivated by and to which degree

LESS	HIGHLY
_____	Price
_____	Comfort
_____	Convenience
_____	Service
_____	Cleanliness
_____	Privacy
_____	Lightning
_____	Green areas
_____	Transportation Links
_____	Security
_____	Clean air / good ventilation
_____	Health

3.1 ABOUT

Please specify the characteristics of your persona and to which degree

PERSONALITY

Introvert	Extrovert
_____	_____
Passive	Active
_____	_____
Thinking	Feeling
_____	_____
Conservative	Open to change
_____	_____

SPENDING HABITS

Frugal	Lavish
_____	_____

3.2 TECHNOLOGY

How willing is the persona to use the following?

TECH SAVVINESS

LITTLE	EXPERT
_____	_____
NOT WILLING	WILLING
_____	IT & Internet
_____	Hardware & SMART Devices
_____	Mobile apps
_____	Social networks



USE CASE WORKSHEET

1.1 WRITE DOWN 5 CHALLENGES THAT ARE RELEVANT TO YOUR PERSONA

1.2 WHAT TECHNOLOGY TRENDS COULD BE PART OF THE SOLUTION?

1.3 BRAINSTORM INITIAL USE CASES THAT COULD SOLVE YOUR USER'S ISSUES (BASED ON THE TECHNOLOGY TRENDS ABOVE)

1.4 PICK ONE USE CASE TO FOCUS ON, ON THE LEFT LIST DOWN WHAT THE NEW EXPERIENCE LOOKS LIKE IF THE PROJECT IS SUCCESSFUL. ON THE RIGHT LIST OUT WHAT COULD HAPPEN IF THE RISKS OF THE PROJECT ARE REALISED.