Paper Size: A4

Card Size: (A7), 126x82mm. (Similar to the size of an iPhone 7/8). This is a Recommended for working by yourself or with a group.

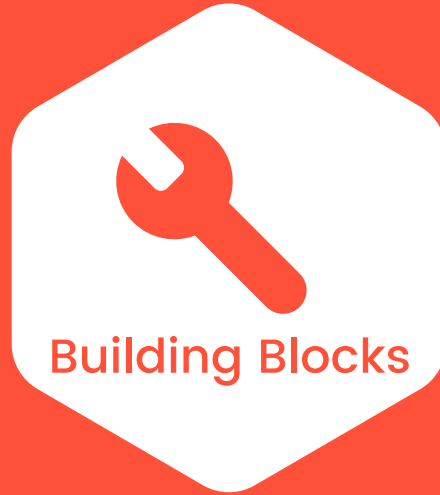
DATA- DRIVEN & SMART LGUS

Building Blocks

The building blocks are the most commonly reoccurring elements and features that data-driven organizations and smart cities are consists of.

Use this to learn the fundamentals and encourage creative playing and reshaping of ideas. Combine and connect to the Getting Started cards once you're ready to take action!

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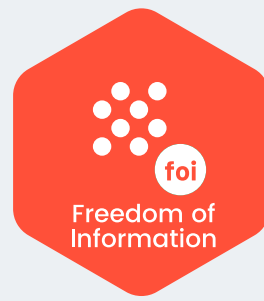Philippines

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DATA- DRIVEN & SMART LGUS

Building Blocks

- freedom of information
- data
- open data
- machine-readable data
- data ethics
- data privacy & security
- data-driven organizations
- data visualization
- data literacy
- data fallacies
- data inventory
- smart cities
- data stewardship & data governance
- data sharing
- dashboards

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Card 1

🔧 **BUILDING BLOCK**

Freedom of Information (foi)
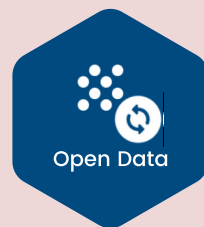
DEFINITION

FOI allows citizens to acquire any government information that is available by request under Executive Order No. 02 S. 2016. FOI is reactive, while Open Data is the proactive release of data.

SIGNIFICANCE

FOI complements Open Data. It gives rise to litigation when the government refuses a request.
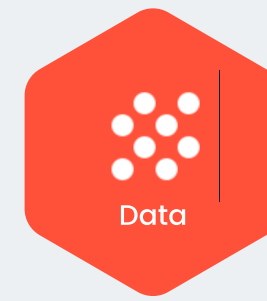
▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

- Open Data
- Smart City

💡 FOI provides a legal right of action & can suggest the kinds of data to prioritize releasing.

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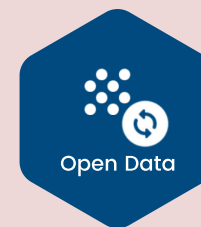## Card 2

🔧 **BUILDING BLOCK**

Data

DEFINITION

Data is the raw material of information & knowledge. Any tweet, image, description, review & price generates new data & can be the basis of your decision.

SIGNIFICANCE

Data becomes information when given context. With high quality data, LGU decisions will not be based on a hunch or "gut feel".
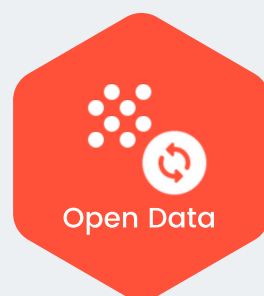
▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

- Gather Data
- Data Inventory
- Open Data

💡 Data becomes usable when a human can understand it & a machine can manipulate it.

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Card 3

🔧 **BUILDING BLOCK**

Open Data

DEFINITION

Open data is data that anyone can universally & readily access, use, modify and share. It is free of charge & in digital form.

SIGNIFICANCE

Open Data provides information to its citizens in a timely manner. It supports innovation by revealing opportunities for private & public sectors to improve operations & develop new services.
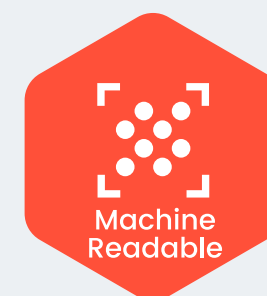
▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

- Open Data
- Smart City
- Data Literacy

💡 Open data doesn't mean everything is open. It respects the rights and privacy of data actors.

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Card 4

🔧 **BUILDING BLOCK**

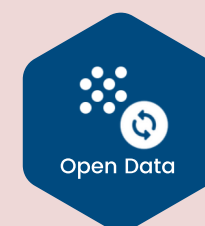**Machine Readable**

DEFINITION

Machine-readable data means the data can be "read" by computers through formats like comma-separated values (CSV), JavaScript Object Notation (JSON),& Extensive Markup Language (XML).

SIGNIFICANCE

Machine-readable data that is high quality & timely can be used in conventional analysis & innovative processing such as machine-learning & artificial intelligence platforms.

▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

- Open Data
- Digitize Data
- Analyze Data

💡 Machine-readable is not synonymous with digitally accessible. A document (like a PDF) may make the data easy for a human to understand but not the most readable for a machine.

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Card 1

Data Ethics

DEFINITION

Data ethics is a branch of ethics that evaluates data practices that can adversely impact people & society—in collection, sharing & use. On top of privacy, it may involve bias in data & algorithms, lack of transparency, data accessibility & gaps.

SIGNIFICANCE

Data Ethics promote fairness & accountability in data practices (collection, management & use) to protect civil liberties, minimize risks to individuals & society, & maximize the public good.
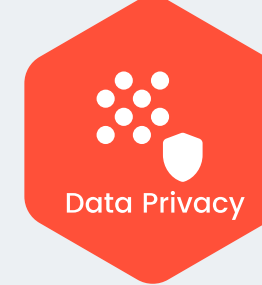
▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

- Gather Data
- Smart City
- Data Literacy

💡 The LGUs play a critical role in setting the example of ethical oversight by making responsible data decisions & values that promote the public good.

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Card 2

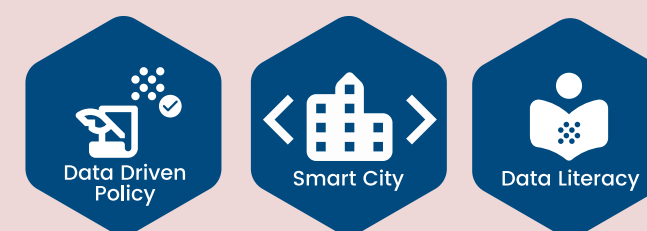**Data Privacy**   **Data Security**

DEFINITION

Data privacy is the protection, management, & collection of sensitive data -- personal, financial, intellectual property, & the like (RA No. 10173-Data Privacy Act). At the same time, Data security includes not just cyber & cryptography security but also the prevention & management of unauthorized data access & system tampering.

SIGNIFICANCE

Having effective data privacy & security measures reduces the risk of loss of the LGU's reputation due to privacy & security breaches and increases trust in the insights, analysis, & analytics performed on the data that could inform critical administrative decisions.

▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

- Data Driven Policy
- Smart City
- Data Literacy

💡 Effective security & privacy implementation requires a culture of awareness – staff should be trained on best practices, how to report & respond to breaches, & be kept up-to-date on the LGU's data governance procedures.

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Card 3

Data-Driven Organization

DEFINITION

Data-driven LGUs are LGUs that effectively, responsibly & consistently utilize data in their decision-making process across all levels of the organization. Data-driven LGUs have data-literate employees & residents.

SIGNIFICANCE

LGUs should effectively, responsibly & consistently open up & use data to design & deliver services around user needs & engage & empower citizens to build their communities & develop solutions.
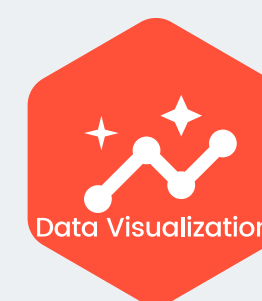
▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

- Data Driven Policy
- Open Data
- Data Literacy

💡 Becoming data-driven involves cultural & institutional change. Applying technology is the easy part. Data Literacy can be an effective tool to address this challenge.

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Card 4

Data Visualization

DEFINITION

Data Visualization is the representation of information in a chart, graph, picture, etc. If we dig deeper, it's about how to visualize/present data effectively & the combination of Narrative, Visuals, & Raw Data.

SIGNIFICANCE

Without effective data visualization practice, LGUs will often make choices or mistakes that confuse & disorient the public & the residents.

▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

- Data Visualization
- Data Analysis
- Data Literacy

💡 The best visualizations help viewers understand not only the data but also its implications. Use the visuals to tell a story and to connect with your constituents.

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BUILDING BLOCK

Data Literacy

DEFINITION

Data literacy involves understanding what data means, reading graphs & charts, drawing correct conclusions from data, & how to recognize when data is being used in misleading or inappropriate ways.

SIGNIFICANCE

If LGUs & the public understand how data works & how to use it to communicate with one another effectively (e.g., Citizens understanding the data being released by the local government &, in turn, use this data to propose solutions), then solutions - digital or not - will be truly inclusive, open, & participatory.
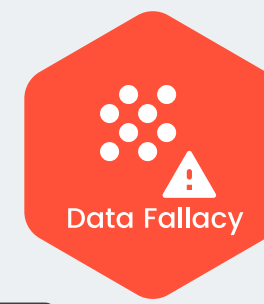
▶ IT'S TIME TO GET STARTED!

Use this card & gather these Getting Started cards to take action!

- Data Driven Policy
- Smart City
- Data Literacy

💡 Data Literacy is the first step to building a data culture & a core skill for LGUs looking to take advantage of the opportunities data offers to create new value and improve operations.

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BUILDING BLOCK

Data Fallacy

DEFINITION

Data Fallacies are common deceptions & misuse of data leading us to false conclusions & poor decisions. One common example is Cherry-Picking – where data is selectively chosen to fit one's claim.

SIGNIFICANCE

Learning about data fallacies can help you avoid being a victim of false conclusions & poor decisions in LGUs. It highlights the importance of collecting diverse & inclusive data.

▶ IT'S TIME TO GET STARTED!

Use this card & gather these Getting Started cards to take action!

- Gather Data
- Analyze Data
- Data Literacy

💡 The best way to avoid data fallacy is Ito improve the LGUs' self-confidence to ask the right questions & assess the data insights through data literacy training.

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BUILDING BLOCK

Data Inventory

DEFINITION

A data inventory is a complete record of datasets that describe what they are about, sources, licenses, & other details. The details about a particular dataset are called metadata.

SIGNIFICANCE

When local government employees need information from another department, having a data inventory will make their job easier since they know what is available & where to obtain it.

▶ IT'S TIME TO GET STARTED!

Use this card & gather these Getting Started cards to take action!

- Gather Data
- Analyze Data
- Data Literacy

💡 Managing &conducting a data inventory is essential for better data sharing & management. Data Inventory is a recurring process.

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BUILDING BLOCK

Smart City

DEFINITION

Smart City is a community that efficiently & responsibly uses technology and data to improve quality of life of its citizens.

SIGNIFICANCE

LGUs cannot separate technology & data from their everyday operations. The effective use of data & technologies in smart cities can save LGUs from wasting their resources. It also facilitates resiliency, sustainability & social inclusiveness.

▶ IT'S TIME TO GET STARTED!

Use this card & gather these Getting Started cards to take action!

- Data Driven Policy
- Smart City
- Data Literacy

💡 Smart cities are for all LGUs, even for municipalities & rural areas, & are not different from resilient cities, sustainable cities, etc. -- they all aim to better the quality of people.

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Card 1

Data Stewardship **Data Governance**

DEFINITION

Data governance establishes a rule-based system for collecting, storing, processing, analyzing, & sharing data & defines the roles & responsibilities for decision-making on data; while Data Stewardship, on top of the implementation of data governance, is the facilitation & steering of public-private data collaboratives toward the public interest.

SIGNIFICANCE

Data Stewardship is a necessity for an effective private-public partnership involving data & without Data Governance, data scientists, technology vendors, data enthusiasts, or intrusive algorithms will define the rules of the game, risking the public interest.

▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

Data Driven Policy **Smart City** **Data Literacy**

💡 Data governance is an organizational capability & is not an IT or technology project nor a separate organization structure as it requires ongoing & whole-government commitment.

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Card 2

Data Sharing

DEFINITION

Data sharing involves the ability to prepare, release, & share, or disseminate quality data to the public & other agencies. It is the transaction of any kind of data between different people, organizations, or applications.

SIGNIFICANCE

Making the data available can save money & time by sharing data across different departments & the public. It also incentivizes the LGUs to manage better & ensure their data are of high quality & encourages more collaboration which leads to innovation.

▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

Data Sharing **Open Data** **Data Literacy**

💡 Data Literacy is the first step to building a data culture & a core skill for LGUs looking to sustain their efforts in sharing high-quality data.

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Card 3

Dashboard

DEFINITION

A Dashboard is a purpose-built software that conveys information by presenting analytics & data visualizations. Dashboards organize, visualize & display curated LGU information at a glance for better communication.

SIGNIFICANCE

Dashboards are great communication tools if your residents know how to read data visualizations. LGUs can also use dashboards to set specific Key Performance Indicators (KPIs) for tracking.

▶ **IT'S TIME TO GET STARTED!**

Use this card & gather these Getting Started cards to take action!

Visualization **Open Data** **Data Literacy**

💡 Dashboards complement Data portals. Open data portals publish raw data, which can catalyze innovation, while dashboards usually represent processed datasets.

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Paper Size: A4

Card Size: (A7), 126x82mm. (Similar to the size of an iPhone 7/8).
This is a Recommended for working by yourself or with a group.

Getting Started

The Getting Started Cards offer a practical overview and guidance on getting started with being smart and data-driven for local government units (LGUs). It provides a set of tools to be smart and data-driven based on the building block cards.

This first iteration of the Getting Started Card Kit for Being Data-Driven and Smart has 11 Getting Started cards which are connected to several building blocks as foundations to accomplish the getting started goal.

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DATA-DRIVEN & SMART LGUS

Getting Started

- how to gather data
- how to do a data inventory
- how to get started with data-driven policies
- how to digitize data
- how to open up data
- how to analyze data
- how to present data
- how to share data internally
- how to be data literate
- how to be a smart city
- how to use data for disasters

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Card 1

Gather Data

KEY CONSIDERATIONS

- Needs : What data to collect?Why? How? How frequent?
- Skills : What are the Skills required for this collection?
- Data Governance: covered by what rules?
- Data Standards & File Format: Do you need spatial data, photos, flat files, Excel files, XML files?

METHODS

The 4 methods for acquiring data are Collecting new data, converting/transforming legacy data, sharing/exchanging data, & purchasing data. This also includes from manual or automated collection like weather data, surveys, records of decisions or ongoing transactions, aggregation of many records such as crime data, & mathematical modelling which is usually used in population projections, etc.

🔧 BUILD A SOLID FOUNDATION!

Gather these Building Block Cards before taking action!

- Data
- Data Inventory
- Data Governance

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Card 2

Data Inventory

PREREQUISITES

- Data literacy to promote the capacity of the LGU work force
- Organization awareness on the timeline & goals as inventorying works best as LGU-wide effort
- Allot resources as Inventorying is a continual process -- updating of the inventory should be done routinely & regularly

STEPS

- Establish an Oversight Authority
- Determine the Data Inventory Scope & Plan
- Catalog Data Assets in Accordance with Inventory Plan
- Data Inventory Quality Checks; Initiate Data Prioritization Efforts

🔧 BUILD A SOLID FOUNDATION!

Gather these Building Block Cards before taking action!

- Data Literacy
- Data Inventory
- Data Governance

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Card 3

Data-Driven Policy

PREREQUISITES

- standardisation of data collection & recording procedures
- adopt Open data & FAIR data principles (findable, accessible, interoperable, reusable)
- infrastructure to ensure the safe storage & exchange of data
- data literacy & skills to promote the capacity of the LGU work force

PILLARS

- linking new data sources, such as (real-time) sensor data to traditional statistics
- co-creation & collaboration between LGUs & citizens in policy implementation, policy evaluation, & transparency & accountability
- allowing for experimentation with new policies & developing new data-driven methodologies at the same

🔧 BUILD A SOLID FOUNDATION!

Gather these Building Block Cards before taking action!

- Data Literacy
- Data Driven Organization
- Data Governance

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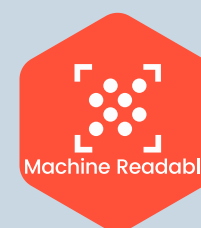## Card 4

Digitize Data

PREREQUISITES

- Data/Document selection criteria to digitize
- Method/s or Tools for Digitizing
- Digitization team/service
- Storage & Management methods
- Data Governance & Stewardship documents

STEPS

- Initiation & mobilization of the project - Selection of documents/records for digitization
- Preparation of documents & Conversion to digital form
- Editing of the digitized documents & their storage method
- Organization of digital collection using metadata
- Access & maintenance

🔧 BUILD A SOLID FOUNDATION!

Gather these Building Block Cards before taking action!

- Data Literacy
- Machine Readable
- Data Governance

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Card 1

Open Data

PREREQUISITES

- Open Data Policy & Data Governance
- Data selection criteria
- Method for sharing/storage open data
- Open Data team
- Open source procurement policies to encourage the use of open source software when possible

STEPS

- Identify key LGU problems that could be resolved by open data & Choose your dataset;
- Apply an open license & Make the data available in bulk & in useful format;
- Make it discoverable by posting it on the web or organize a central catalogue to list your open datasets
- Support the open data community through an online forum where new data sets, ideas, visualizations & proof of concepts can be discussed
- Establish priority for ongoing release

🔧 **BUILD A SOLID FOUNDATION!**

Gather these Building Block Cards before taking action!

- Open Data
- Smart City
- Freedom of Information

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Card 2

Analyze Data
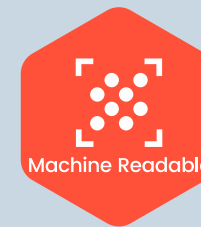
KEY CONSIDERATIONS

- Data Quality & Provenance
- Standardized Methods
- Openness & Transparency
- Reproducibility – Reference your data sources
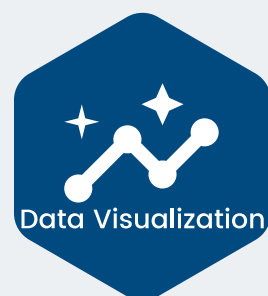- Documentation of the tools and methods used in analysis

STEPS

- Define your goals
- Clean your data
- Build your data analysis toolkit which depending on the amount & type of data for analysis
- Look for patterns & trends in the data
- Compare current data against historical trends
- Look for data that goes against your expectations/outliers & investigate further
- Visualize your data & interpret results

🔧 **BUILD A SOLID FOUNDATION!**

Gather these Building Block Cards before taking action!

- Machine Readable
- Data Fallacy
- Data Ethics

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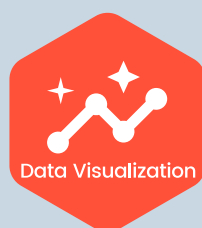## Card 3

Data Visualization

DESIGN PRINCIPLES

- Less is more. Make every pixel and word count
- Avoid decorative use of graphics
- Avoid three-dimensional charts & pie charts. Start bar charts at zero
- Use bullet graphs instead of gauges to save space
- Use color only to highlight or accentuate meaning

STEPS

- understand the context
- choose an effective visual
- eliminate clutter
- focus the audience' attention to key details
- tell a story

🔧 **BUILD A SOLID FOUNDATION!**

Gather these Building Block Cards before taking action!

- Data Visualization
- Data Literacy
- Dashboard

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Card 4

Data Sharing   Internal   External

METHODS

- Data catalog - page listing out all the available dataset with links
- Data portal - rich web application providing an improved user experience

STEPS

- create a data management plan - includes strategy, policies, data sharing agreements, access controls and copyrights, and software management
- acquire, process & analyze the data if & when needed
- storing, managing & securing the data as well as any accompanying documentation & analytical findings, for future use
- publish and share the data to the relevant audiences- internally or externally. Key considerations include the recipients of the data set, the sensitivity of the data that is being shared, the choice of which metadata should be included, & the data sharing license.

🔧 **BUILD A SOLID FOUNDATION!**

Gather these Building Block Cards before taking action!

- Data Sharing
- Data Stewardship
- Data Privacy

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Card 1

Data Literacy

PREREQUISITES

- Identify critical data skills needed for the agency
- Assess the current staff capacity for those data skills
- Perform a data skills gap analysis to prioritize the agency's needs
- Appoint a data champion/lead & management team

STEPS

- Clear- align leaders around the strategic aims , ambition & success factors for becoming data literate
- Aware-Communicate the vision & case for change & begin to create ownership of the data literacy program top down & bottom up
- Assess & Train - Design the tools & training based on the assessment (see prerequisites)
- Sustain - continuously manage, communicate, update & monitoring the data literacy skills of the LGU workforce

🔧 BUILD A SOLID FOUNDATION!

Gather these Building Block Cards before taking action!

- Smart City
- Data Literacy
- Data Driven Organization

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Card 2
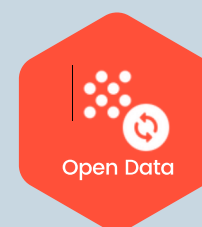
Smart City

DOMAINS

- data - e.g. open data, data governance
- governance - e.g. procurement, accessibility
- hardware & software - e.g. interoperability, open source
- people & engagement - e.g. civic tech community, data literacy

STEPS

- pass necessary policies: e.g. open data, data governance, open-source software-first, open government
- have a champion & create a management team
- assess interoperability & quality of your data, systems & infrastructures & address the gaps
- make data inventory a routine & prioritize the quality of your data
- crowdsource/ask the residents what digital services they need/want
- practice open innovation & sustain digital & data literacy

🔧 BUILD A SOLID FOUNDATION!

Gather these Building Block Cards before taking action!

- Open Data
- Data Literacy
- Data Driven
- Data Governance

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Card 3

Disaster Data

DATA BY MAJOR NATURAL HAZARD TYPE

- Earthquake : Natural hazard maps, Historical catalog, Monitoring Network
- Flood : Natural hazard maps, Monitoring Network
- Landslide : Natural hazard maps. , Historical catalog
- Drought: Natural hazard maps, Climate Change projections

STEPS

- Refer to existing global & national open data efforts
- Assess current Natural Hazard Datasets for Operational Purposes
- Creation of a spatial data repository
- Build local capacity within governments to manage spatial data & local scientific capacity
- Preparation of natural hazard data availability profile

🔧 BUILD A SOLID FOUNDATION!

Gather these Building Block Cards before taking action!

- Data
- Data Inventory
- Data Governance

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