**#9**

*IoT and Smart Cities*

**How The Hague utilised policy benchmarking to develop smart city next steps**

*Difficulty Level: Medium*

*Completion Period: 3 + 10 hours for exercise*

**Introduction**

[[Et billede, der indeholder udendørs, vand, sky, genspejling

Automatisk genereret beskrivelse](https://scwcontent.affino.com/AcuCustom/Sitename/DAM/041/Binnenhof_Palace_The_Hague_smart_cities_Adobe_rt.jpg)](https://scwcontent.affino.com/AcuCustom/Sitename/DAM/041/Binnenhof_Palace_The_Hague_smart_cities_Adobe_rt.jpg)

*[The Hague is among the first cities to begin using the benchmarking tool and it is already supporting its efforts in addressing policy gaps](https://scwcontent.affino.com/AcuCustom/Sitename/DAM/041/Binnenhof_Palace_The_Hague_smart_cities_Adobe_rt.jpg)*

The Hague is a major city in the Netherlands and, as with any big city, there is increasing pressure on the local government in terms of public space and how it’s used, and how public services are being operated. Naturally, the city has turned to digitalisation to improve services and experiences across the municipality, from education to safety and security, and to enhance liveability in a place which is becoming more crowded[[1]](#footnote-1).

Among the city’s major challenges as it grows is the environment. It must juggle crowdedness and a need for more green space, and a growing population with the need for new and more efficient waste services. The city’s aim is to become climate neutral, and digitalisation is a key part of that goal, with data-based metrics and goals driving progress. However, it’s essential that the digital transformation at the heart of these goals is secure, and that becoming a digitalised municipality doesn’t leave anything to chance from a cybersecurity perspective.

“We participate in the 100 Climate Neutral and Smart Cities EU mission, together with seven other Dutch cities,” explains Tijn Kuyper, advisor on digital innovation and smart cities. “At the same time, The Hague is positioned as a city of peace and justice, and part of that means cybersecurity is a big area of focus, so it’s important that these efforts are integrated completely.

“We work on open data and AI across all stakeholders in the city, as well as together with citizens, institutions and entrepreneurs. This has constituted the establishment of the city’s living lab in Scheveningen – our playground to experiment on projects and new technologies, both related to the environment and other challenges.” Kuyper explains that the city wants to increase its practical experiments in living lab scenarios, but also says that these must be balanced with internal processes at the municipal level to ensure the city can support those experiments.

Picking up on this, Saskia Bruines, The Hague’s deputy mayor responsible for ICT and digitisation, says that people want to know what’s happening with all of the information and data that’s being collected to support these experiments and new services.

“Transparency is crucial, that is why we’ve established public registers for the algorithms and sensor technology used by the city and the data we process. We also actively share our knowledge and experience with other municipalities – both nationally and internationally.”

“The Hague is the third largest city of the Netherlands, but all (more than 340) Dutch municipalities are talking about this challenge,” explains the deputy mayor. “What are the ethical and security risks of using this data for urban challenges?”

These are significant questions that are crucial to answer before undertaking any kind of work with data in a municipal or broader public setting – and there is another question that must be asked alongside them: how can cities understand where the gaps are in their approach?

***Benchmarking against best practice***

Answering this question is difficult to do in a way that is objective, particularly in a world where public and private organisations alike often work in silos, and where knowledge is gatekept. However, the G20 Global Smart Cities Alliance has developed a solution that can begin to give cities direction and purpose in how to identify those gaps and inform strategic decisions on how to fill them.

It’s called the **Smart Cities Policy Benchmarking Tool** and asks cities to self assess their own policies against a set of model policies, designed to represent best practice. After completing the assessment, the tool will display a city’s score out of 100 and, depending on the score, will provide a list of recommended actions and related resources to support cities in completing those actions.

From here, cities are able to select which actions to focus on and create a timeline to track progress, help set long-term goals and achieve smart city policy maturity. Co-created in collaboration with Accenture, this tool serves as the anchor in a suite of Urban Transformation tools designed to help cities assess their current state and identify next steps to improve and transform.

“The reason we created the benchmarking tool is for any city anywhere in the world to be able to benchmark how strong their smart city technology governance really is,” explains Christy Mitchell, lead of the G20 Global Smart Cities Alliance. “There are cities who on the surface appear to be smart city leaders, with a lot of innovative technology in place, but when you take a closer look, the basic technology governance policies are lacking.” Specifically, Mitchell references policies relating to open data, cybersecurity and community digital inclusivity – what should be the basic building blocks for smart cities.

The Hague is among the first cities to begin using the benchmarking tool and it is already supporting its efforts in addressing policy gaps in key areas, according to Daan Rijnders, who leads the Cyber Secure The Hague programme: “It helps us gain more insight into our current level of processes and identify potential gaps. In line with the model policies in the tool, The Hague is performing well already, and I think we’re one of the stronger cities in that sense. But it is helping us to understand the policy frameworks we have set out in more context. We have a lot of initiatives and bundling them together into a coherent policy is always challenging, but the tool is supporting us in doing that.”

Following pilots with pioneer cities like The Hague, the benchmarking tool is now available for cities to get started and take their assessments.

**Smart Cities Policy Benchmarking Tool**

[Et billede, der indeholder tekst, software, skærmbillede, Computerikon

Automatisk genereret beskrivelse](https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Risk/gx-wef-governing-smart-cities-deloitte-executive-summary.pdf)

Read more about the policies [here](https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Risk/gx-wef-governing-smart-cities-deloitte-executive-summary.pdf).

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Automatisk genereret beskrivelse](https://www.youtube.com/watch?v=hf-Y3KWzhXw)

*What are smart cities and how can data and technology help turn your city into one?*

*Find out in Burns & McDonnell's BenchMark. Learn more:* [*https://hubs.ly/H0bBpf50*](https://hubs.ly/H0bBpf50)

**Benchmarking**

Benchmarking is a systematic process of comparing an organization's products, services, processes, or performance against those of industry leaders or best-in-class examples. The goal is to identify best practices, determine where gaps exist, and then devise strategies to achieve a competitive advantage or improve current performance.

The concept of policy benchmarking for smart cities is familiar, and there are several tools, frameworks, and indicators developed by different organizations to evaluate and benchmark smart city policies and initiatives.

There are several key elements to understand about benchmarking:

*Purpose*: Benchmarking aims to understand the current position of an organization in comparison to others, especially industry leaders or high performers. This understanding can guide improvements, set targets, and inform strategic decisions.

*Types of Benchmarking*:

Process Benchmarking: Focuses on improving specific critical processes and operations.

Performance Benchmarking: Compares products and services in terms of performance characteristics and specifications.

Strategic Benchmarking: Looks at how companies compete in the market.

Functional Benchmarking: Compares similar functions across industries.

Internal Benchmarking: Compares similar functions within the same organization (between departments or business units, for instance).

*Data Collection*: This involves identifying which metrics to benchmark and gathering relevant data. It might include surveys, interviews, observations, or research. Companies might turn to industry studies, competitors' public records, or direct engagement with other companies for this data.

*Analysis*: Once the data is collected, it's compared to the company's metrics to identify gaps and opportunities.

*Implementation*: Based on the insights gained from the benchmarking analysis, the organization can develop and implement a plan to make necessary improvements.

*Review*: Over time, the organization reviews the results of the implemented changes to ensure improvements are realized and sustained.

*Continuous Improvement*: Benchmarking isn't a one-off process. It's a continuous effort to improve, requiring ongoing measurement and comparison.

**Benefits of Benchmarking**

*Identify Performance Gaps*: By comparing against industry best, a company can identify areas of improvement.

*Setting Goals*: It helps in setting clear and tangible targets for performance improvement.

*Innovate*: Learn from industry best practices and adopt innovative approaches to improve.

*Improve Customer Satisfaction*: By understanding the best practices in the industry, a company can strive to meet or exceed customer expectations.

*Cost Efficiency*: By understanding more efficient methods or processes, a company can potentially reduce costs.

It's important to note that benchmarking is not about copying what others are doing. Instead, it's about understanding the best practices and adapting them to fit the unique context and capabilities of your organization. While benchmarking offers insights into city standards, it can sometimes lead to misleading comparisons due to differing business contexts. Overemphasis on competition may overshadow unique value propositions, and a focus on imitation can stifle true innovation. Additionally, benchmarking can be resource-intensive, potentially diverting time and funds from other critical areas.

**How To Make A Benchmarking Tool**

Creating a benchmarking tool requires careful planning, understanding of the specific domain or area you're benchmarking, and familiarity with data analysis and collection methods. Here's a step-by-step guide to help you create an effective benchmarking tool:

1. *Define the Objective*: Understand why you're creating the benchmarking tool. What do you want to measure? Is it a specific process, performance of a product, or some other metric? Your objective will guide the entire benchmarking process.
2. *Determine Key Performance Indicators* (KPIs): Decide on the specific metrics or KPIs you'll measure. These should align with your objective and offer quantifiable data points for comparison.
3. *Choose the Benchmarking Type*: Decide on the type of benchmarking most suitable for your objective. It could be process, performance, functional, strategic, or internal benchmarking.

*Example*: In the context of "openness and interoperability," a type of benchmarking that can be used is "Functional Benchmarking." Consider two different cloud storage service providers – CloudA and CloudB. Both offer API (Application Programming Interface) services to developers for integrating cloud storage into third-party applications. A new startup wants to choose one of these providers but places a high value on the openness and interoperability of these APIs, ensuring they can seamlessly integrate the chosen service with other tools and platforms they use.

To make an informed decision, the startup undertakes functional benchmarking focused on the interoperability aspect. They assess the documentation, flexibility, compatibility, and openness of the APIs offered by CloudA and CloudB. By comparing how easily each API integrates with various tools, programming languages, and platforms, they identify which cloud provider offers superior interoperability features. This assessment aids the startup in choosing a cloud provider that aligns best with their interoperability requirements, ensuring smoother integrations and future scalability.

1. *Identify Data Sources*:

* Determine where you'll get your data. This could be internal records, industry reports, direct surveys, or competitor data.
* If you need to gather data through surveys, design concise and clear questionnaires.

5. *Develop the Tool*:

* Platform: Choose whether your tool will be software-based (e.g., a spreadsheet, a specialized software, or a web application) or a more manual system like checklists and templates.
* User Interface: If you're creating software, the user interface should be intuitive. Users should be able to input data easily and retrieve results without hassle.
* Data Processing: Incorporate functionality to analyze the data. This might involve statistical analysis capabilities, data visualization methods, or simple comparative functions.

1. *Test the Tool*:

* Begin with a pilot test using a smaller dataset to ensure the tool functions correctly.
* Make adjustments based on any glitches or issues found.

1. *Collect Data*:

Start the benchmarking process by collecting data. If using surveys or interviews, ensure that they are administered consistently across all entities being benchmarked.

1. *Analyze and Interpret Results:*

* Compare the data against the benchmarks or the entities you're evaluating against.
* Visualize the data using charts, graphs, or tables for clearer understanding.
* Interpret the results to understand where gaps, strengths, or areas of improvement exist.

1. *Review and Update*:

* As industries/cities and processes evolve, benchmarks might need to be updated. Regularly review your tool to ensure it remains relevant.
* Based on user feedback, make necessary adjustments to the tool for better accuracy or user experience.

1. *Documentation and Training:*

* Prepare a user manual or guide to help users understand how to use the benchmarking tool effectively.
* Offer training sessions if the tool is complex or if it's essential for users to understand the nuances of the benchmarking process.

And for recapitulating: **Different types of benchmarking: Examples And Easy Explanations**

[Et billede, der indeholder tekst, skærmbillede, software, Website

Automatisk genereret beskrivelse](https://www.youtube.com/watch?v=UjBy4nDeb_I)

**Quiz On Benchmarking And Smart Cities Policy Benchmarking**

1. Which of the following best defines benchmarking?

a) Copying practices from industry leaders.

b) A systematic process of comparing an organization's performance against industry standards or best practices.

c) A detailed study of a competitor's revenue streams.

d) Setting goals based on a company's past performance.

1. Which type of benchmarking focuses on comparing specific critical processes and operations?

a) Performance Benchmarking

b) Strategic Benchmarking

c) Process Benchmarking

d) Functional Benchmarking

1. What's a potential negative outcome of benchmarking?

a) Enhanced company reputation

b) Increased revenues

c) Stifling of innovation

d) Improved employee morale

1. Why would a city want to use a Smart Cities Policy Benchmarking Tool?

a) To sell the data they collect to private firms.

b) To evaluate its adoption of smart technologies and compare against established standards.

c) Solely for public relations purposes.

d) To determine the population of the city.

1. In the context of Smart Cities, what might 'Data and Technology' benchmarking assess?

a) The city's historical monuments.

b) How cities gather, analyze, and use data for decision-making and service delivery.

c) The number of pets in each household.

d) The favourite food of city residents.

1. Which statement is true about benchmarking in the context of Smart Cities?

a) It is only about installing smart lights and sensors.

b) It involves copying the strategies of other cities without any adjustments.

c) It aims to understand and adopt best practices, considering the city's unique context and challenges.

d) It avoids any public engagement.

***Answers:***

1. b
2. c
3. c
4. b
5. b
6. c

**Smart Cities Policy Benchmarking Exercise: Accountability in Cybersecurity**

This exercise – as an example - should provide participants with a deeper understanding of the role of accountability in cybersecurity within the context of smart cities and offer a blueprint for cities looking to fortify their cybersecurity infrastructure.

**Objective**: Understand how different cities ensure accountability in cybersecurity to enhance their smart city initiatives and protect their citizens' data and city infrastructure.

**Instructions**:

1. **Research and Data Collection**:
   * Identify 3-5 cities recognized for their advanced smart city initiatives.
   * Collect data on their cybersecurity policies, especially focusing on accountability aspects. This can include standards, guidelines, reporting mechanisms, and enforcement practices.
2. **Identify Key Performance Indicators (KPIs)**:
   * Examples might include the number of cybersecurity audits conducted annually, response time to cybersecurity incidents, or the percentage of city staff trained in cybersecurity best practices.
3. **Document Clear Definitions**:
   * Clearly define what "accountability in cybersecurity" means. Consider elements like transparency in reporting breaches, responsibilities of various departments, and mechanisms for citizens to raise concerns.
4. **Compare and Contrast**:
   * List the accountability measures each city has in place. Compare and highlight unique practices or policies that stand out.
   * Analyze the effectiveness of these measures based on available data. For instance, cities with robust accountability mechanisms might have fewer breaches or faster response times.
5. **Engage Stakeholders**:
   * Conduct interviews or surveys with city officials or cybersecurity experts to gain insights into the practical aspects of implementing and maintaining accountability.
6. **Draft Recommendations**:
   * Based on your findings, draft a set of recommendations for a city looking to improve accountability in its cybersecurity for smart city initiatives.
   * Ensure these recommendations are actionable. For example, instead of just suggesting "improve transparency," provide specifics like "publish an annual cybersecurity accountability report accessible to the public."
7. **Review and Feedback**:
   * Share your findings and recommendations with a group (it could be peers, city officials, or experts in the field). Gather feedback and refine your benchmarking outcomes.

**Deliverable:**

Prepare a report on 'Accountability in Cybersecurity for Smart Cities.' The report should include:

* An introduction explaining the importance of the topic.
* Profiles of the cities studied.
* A comparative analysis of accountability measures.
* Insights from stakeholder engagement.
* Actionable recommendations for cities aiming to enhance accountability in cybersecurity.

**Reflection:**

After completing the exercise, consider together with your class:

* What were the most common accountability measures across cities?
* Were there unique practices that seemed especially effective or innovative?
* How can cities balance transparency and security when addressing cybersecurity accountability?

1. [Smart Cities World - Policymaking - A tool for transforming smart city governance: How The Hague utilised policy benchmarking to develop smart city next steps](https://www.smartcitiesworld.net/policymaking/a-tool-for-transforming-smart-city-governance-how-the-hague-utilised-policy-benchmarking-to-develop-smart-city-next-steps) [↑](#footnote-ref-1)