Please indicate the following for the smart city of The Hague as depicted in the video of the MOOC on Big Data Strategies to Transform Your Business.

1. Who are the stakeholders (and innovative agents) and what are their values? (10 points)

**Ans:**

Knowledge Institutions

Values: They apply knowledge they learned and they broaden their knowledge, they are also making The Hague a better city.

Government (ministry and local)

Values: Helping companies and contribute to a more efficient The Hague with better health for citizens.

Small and medium sized companies

Values: Getting more profit by being more efficient.

Infrastructure stakeholders

Values: The fastest way to let customers really know the city and provide good infrastructure conditions for companies in The Hague.

Municipality

Values: Provide information on smart cities in The Hague and help companies build a better The Hague through subsidies or loans.

Citizens of The Hague

Values: Live in healthier cities and take advantage of innovation without encountering privacy concerns.

1. Do their goals align, are neutral to or contradict each other? (10 points)

**Ans:**

Infrastructure and company goals are aligned. Small and medium-sized companies in The Hague could see higher profits if customers' commuting around the city becomes faster and more convenient.

The goals of all stakeholders are aligned with each other. A smart city is better for everyone in The Hague. Companies gain the freedom to innovate and increase profits, and the people of The Hague are building a healthier city with better infrastructure.

1. How does this affect the situation for all stakeholders? (10 points)

**Ans:**

This is undoubtedly a good impact mostly for all stakeholders in the Smart Hague City, who have the same goals and present a vision of mutual benefit and win-win. For citizens, however, the biggest concern has to do with privacy, as information about their commutes and consumption is collected by companies. The second change has to do with business. They need to improve their skills related to digitization and data usage. It is necessary for company employees to pay more attention to the available data. The third change is cooperation between the government, infrastructure companies and local companies in The Hague. They are collaborating on innovation to make The Hague better and more profitable for all parties.

1. Please analyse the smart city of The Hague as depicted in the video of the MOOC on Big Data Strategies to Transform Your Business by using the scheme from Werker (2020). Assessing Responsible Research and Innovation (RRI) systems in the digital age. In E. Yaghmaei & I. Van de Poel (Eds.), Assessment of Responsible Innovation: Methods and Practices. Abingdon (UK): Taylor & Francis. Werker, 2020, Figure 11.2. In particular,

I. identify the structural components including all innovative agents and other stakeholders as well as their values (8 points)

**Ans:**

Knowledge Institutions

Values: They apply knowledge they learned and they broaden their knowledge, they are also making The Hague a better city.

Government (ministry and local)

Values: Helping companies and contribute to a more efficient The Hague with better health for citizens.

Small and medium sized companies

Values: Getting more profit by being more efficient.

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Values: The fastest way to let customers really know the city and provide good infrastructure conditions for companies in The Hague.

Municipality

Values: Provide information on smart cities in The Hague and help companies build a better The Hague through subsidies or loans.

Citizens of The Hague

Values: Live in healthier cities and take advantage of innovation without encountering privacy concerns.

II. find crucial processes including those to identify shared values (8 points)

**Ans:**

Changing or innovating business models, technological developments, market and institutional forces are crucial processes in the Smart Hague case. With the digitization of smart cities, promoting customer consumption and recording consumer information are important steps for innovative business models. At the same time, more convenient and faster commuting is also a prerequisite for promoting business model changes, which require innovation and reform in technological development. In terms of institutional, the municipal government will take the lead to promote the reform of Wisdom Hague and drive its technological development and business model transformation.

III. assess components and processes based on shared values (if you can detect them, else provide some insights how they could look like) (8 points)

**Ans:**

Through the analysis of privacy-controlled big data, the overall classification is divided into shared value assessment components and process security issues, equitable distribution of benefits, strategic behavior, and biases. While big data may help identify shared values and address them in the RRI process, both require properly available data and appropriate institutions to protect their use in the RRI process. Technical data that is almost always available is usually sufficient to support the RRI process. In the case of Smart City The Hague, each innovation agents needs to take into account the privacy protection of customers, and these agents should reach a consensus on how to promote the development of the smart city and protect the privacy of customers to a certain extent, to reach a state of equilibrium.

IV. derive (value-related) drivers and bottlenecks of desirable processes (8 points)

**Ans:**

While the use of communication data can lead to strategic actions and potentially pose privacy or security concerns, it also means that there is a better RRI process for individuals or organizations to mediate on how and when stakeholders contact each other and what information they exchange for more information. This may give them a more detailed understanding of the technical, innovative and ethical aspects of the exchange, giving them the opportunity to influence communication within the RRI system to overcome the lack of proper communication and collaboration processes to develop shared values. In the case of Smart Hague, the core contradiction lies in how to reach an agreement on the communication and writing of various agents, and find a balance to effectively protect customer privacy while collecting enough information to promote the development of smart cities. This will mean that the values of all stakeholders will be better incorporated and better aligned with emerging technological opportunities.

V. propose solutions for problems identified in III. and IV. based on shared values into the next cycle of I. and II. (8 points)

**Ans:**

Currently, big data and its analytical tools are often the driving force behind new solutions in RRI systems. In addition, IoT platforms can be used to better integrate all stakeholders of the RRI system into the RRI process and better mediate the process. While big data and IoT solutions pose many potential problems, including these, the RRI process should help overcome them. One of the solutions is that companies have the opportunity to provide big data-driven solutions that protect personally identifiable information by design for privacy, i.e. being transparent about what they do, complying with customer wishes regarding privacy, and explaining as much as possible how they process their data.

1. Please have a look at the smart city of The Hague from a research and innovation system perspective. In particular, give

• an example of a value concern related to either the use of big data or internet of things solutions in the Smart City of The Hague (8 points) and

**Ans:**

The records or data of customers commuting and shopping in The Hague are collected by the company and used for big data analysis of the consumption behavior of customer groups for the next step of innovation. At this point, customers are concerned that their privacy has been violated, or thats too much information has been collected.

• an example of how the use of big data or internet of things solutions to facilitate responsible research and innovation systems for the Smart City of the Hague (12 points).

**Ans:**

From the communication and negotiation of various innovative agents, an expedient approach needs to be drawn for the collection of customer information. Should come up with a big data-driven solution that protects personally identifiable information by privacy-by-design, i.e., being transparent about what they do, complying with customer privacy requirements, and explaining as much as possible about how they handle their data. Stakeholders interests have to be taken into consideration from the very beginning

Innovation Systems

- constituted of institutions (formal & informal), innovative agents, and the relationship between agents

- seeing innovative agents as individual agents

The innovation system’s approach defines how innovation can emerge by having a system made of institutions and innovative agents who interact with each other.s

Triple Helix

Triple Helix Approach:

- consists of groups of academic, industry, and government and the relationships among those groups

- seeing agents as groups, rather than as individuals

National Innovation System:

- innovation system with a geographical (national) delineation in which the innovative agents relate to each other in that geographical unit

I. identify the structural components including all innovative agents and other stakeholders as well as their values (8 points)

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| the structural components are the stakeholders and their values (see 1a), |

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| their relationships developing around different smart city solutions (alternatively a concrete example) |

Relationships: different stakeholders come together in different ways: municipality, private companies, and universities come together to work on smart city projects, while people living/visiting The Hague interact with public transport companies/utility companies during their “urban” routine.这些innovation agent 和 stakeholder的关系

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| --- |
| \* formal institutions, such as Dutch laws and regulations, and informal institutions, such as codes of conduct |

Institutions: Formal: the most important hard institutions are: European laws (very important in this case is the GDPR), Dutch national laws, and provincial and municipal rules. Informal: the most impactful soft institutions are codes of conduct of private companies, the interviewee mentions how different companies have different mindsets (due to different routines/behaviors) inside them, if these informal institutions are too different, e.g., between big and small firms, this could seriously hamper the innovation project.

II. find crucial processes including those to identify shared values (8 points)

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| collaborations between various stakeholders to realize smart city projects in The Hague (alternatively a concrete example) |

In this case, the only collaborative moments between stakeholders to identify shared values are when innovative agents come together to work on Smart City projects.

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III. assess components and processes based on shared values (if you can detect them, else provide some insights how they could look like) (8 points)

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| --- |
| the aligned value of efficiency of smart city solutions can work as a joint value  the contradictory value of privacy might hold smart city solutions back |

The shared value of efficiency can boost relationships (collaboration projects) among innovative agents and increase acceptance among other stakeholders that share this value. The unaligned value of privacy can have the opposite effect on relationships among stakeholders, e.g., the municipality could stop a project with private companies on the basis of privacy concerns. 共同的价值观是什么，怎么继续共同。不同的价值观是什么，会怎么样。

IV. derive (value-related) drivers and bottlenecks of desirable processes (8 points)

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| --- |
| the joint value of efficiency of smart city solutions can work as a value-related driver if all stakeholders collaborate on this  Attention must be paid because of the value privacy which can work as a value-related driver if those negatively affected  work against smart city solutions because of privacy concerns |

In order to boost the collaboration processes (the desirable process), and considering stakeholders’ values, a value-related driver could be a collaboration based on the value of efficiency. Possible value-related bottlenecks relate to the value of privacy, which could be used by stakeholders as a driver to oppose smart city projects. 什么价值观可以促进共同价值观，什么不同的价值观可能造成不公认

V. propose solutions for problems identified in III. and IV. based on shared values into the next cycle of I. and II. (8 points)

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| the value of privacy should be considered from the start of the innovation processes so that parts of the solutions which are not privacy proof can be improved within the process and not afterwards when there is already a lot of resistance building up |

The main problem identified in III and IV relates to privacy, there is therefore the need to include this value among the shared values in I and II. Privacy could be included in the cycle, e.g., by including a committee of citizens with voting power in each smart city project to make sure that they are updated and agree on every stage of the project, from the start to the deployment. 举个例子让所有人怎么做能达成价值观共识。