



START Hack 2023 | City of St.Gallen

Nicola Wullschleger, Project Manager Smart City & Open Data
St.Gallen, March 22nd 2023

ABOUT



*We form the **CDO office** of the city
of St.Gallen*



Christian Geiger

- Chief Digital Officer (CDO)
- Politics and Administrative Science
- Open Data and Smart City activities
- Discord: StGallen_City_Christian



Nicola Wullschleger

- Project Manager Smart City and Open Data at City of St.Gallen
- Discord: StGallen_City_Nicola



Laure Brem

- Intern Smart Government
- Discord: StGallen_City_Laure

*Case content expert at the
waste disposal department
(ESG)*



Marc Maurhofer

- Responsible for waste logistics and waste consulting
- Responsible for the case content and its implementation

Availability and contact information during START Hack 2023



Availability at the booth

- Wednesday (9.30 pm – 1 am)
- Thursday (10 am – 10 pm)
- Friday (8 – 10 am)

Experts

- We take people from **Waste Disposal Department** into consideration via phone if questions cannot be answered directly.

Communication channels

- Please come directly to us, or contact us via **Discord**.
- Please **don't use any other channels**. Don't use the START Summit platform to get in touch with us.



Source: International Students Committee, 2011, Wikipedia

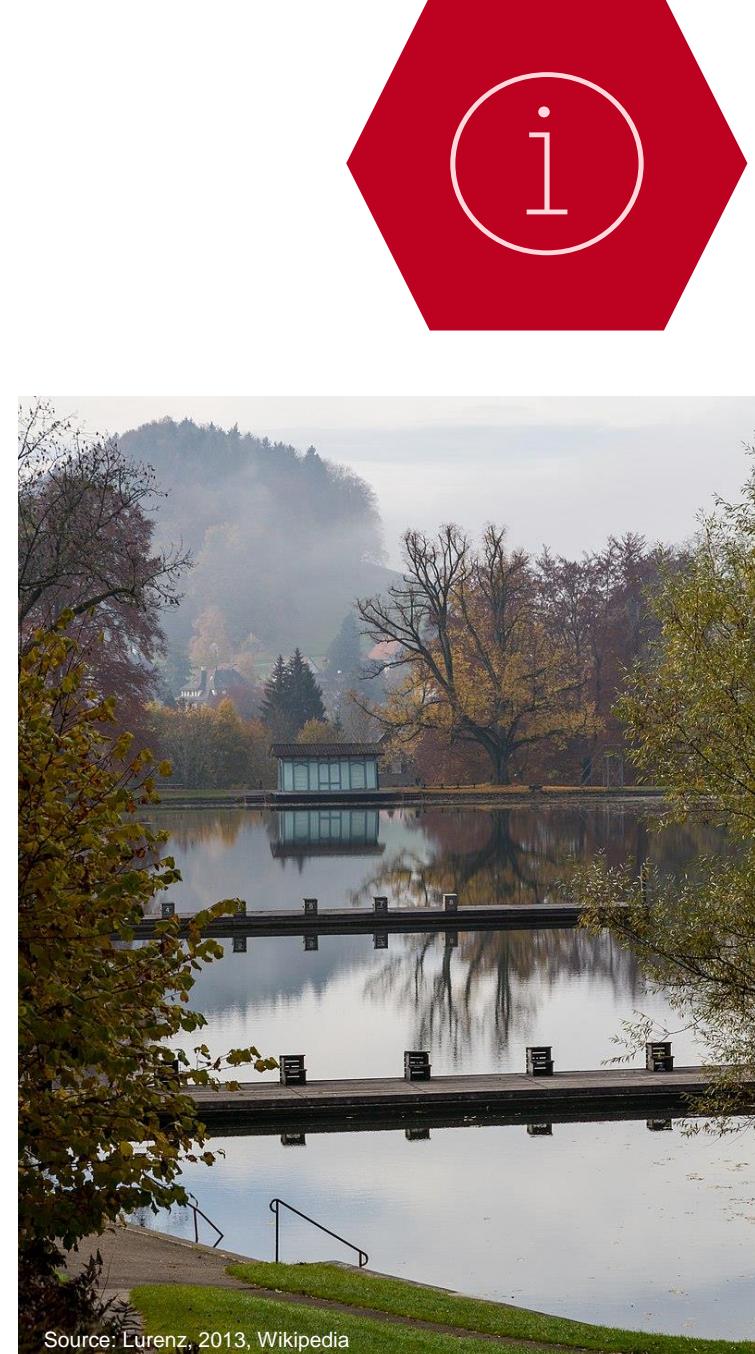


Source: ANKAWÜ, 2013, Wikipedia.

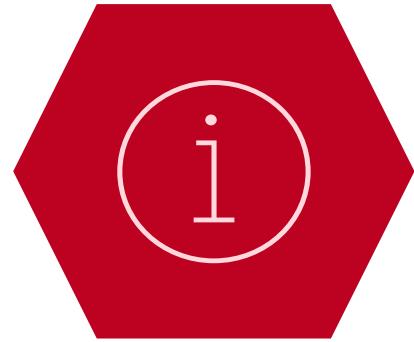


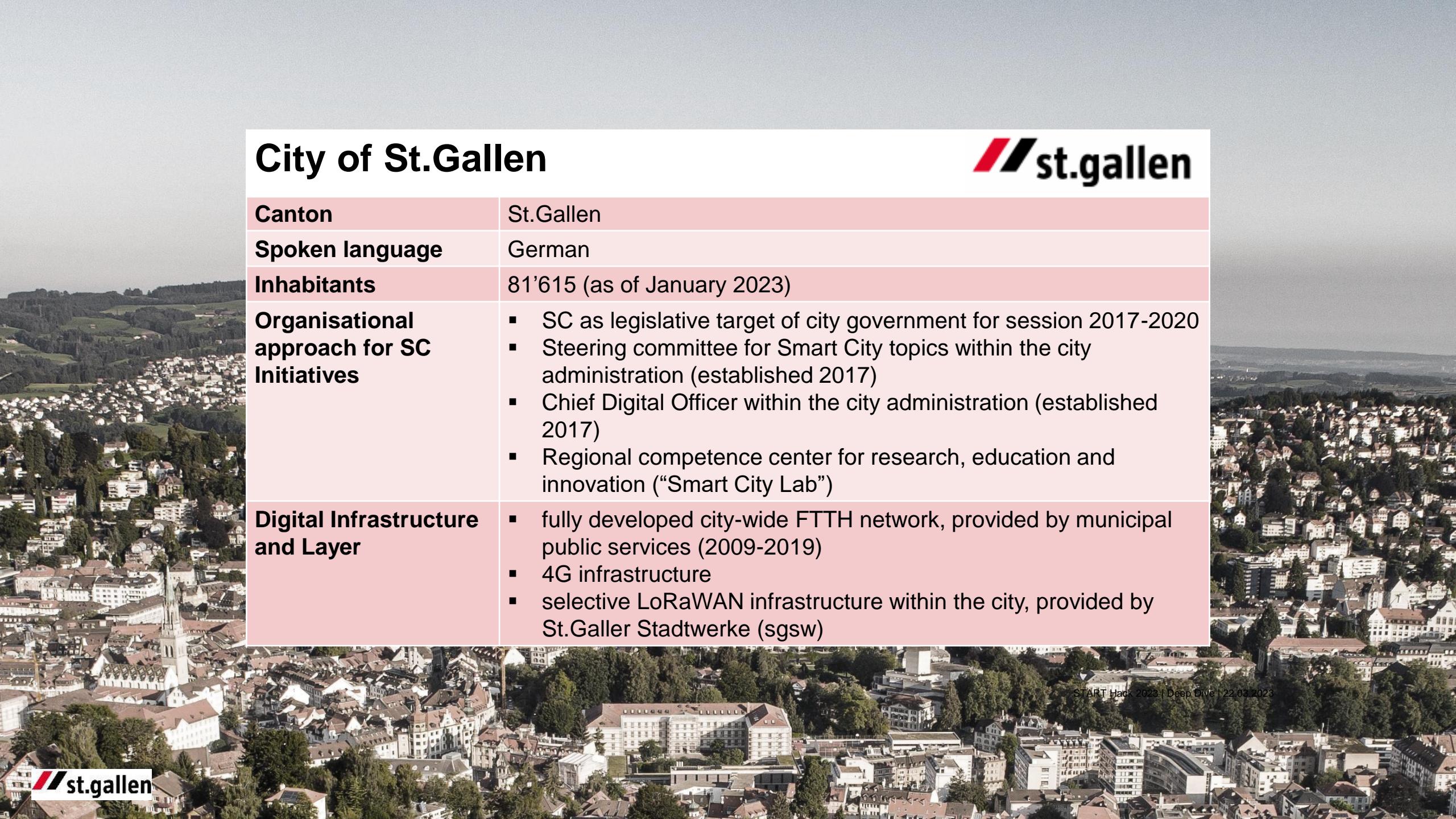
Source: Petar Marjanovic, 2007, Wikipedia

START Hack 2023 | Deep Dive | 22.03.2023



Source: Lurenz, 2013, Wikipedia





City of St.Gallen



Canton	St.Gallen
Spoken language	German
Inhabitants	81'615 (as of January 2023)
Organisational approach for SC Initiatives	<ul style="list-style-type: none">▪ SC as legislative target of city government for session 2017-2020▪ Steering committee for Smart City topics within the city administration (established 2017)▪ Chief Digital Officer within the city administration (established 2017)▪ Regional competence center for research, education and innovation ("Smart City Lab")
Digital Infrastructure and Layer	<ul style="list-style-type: none">▪ fully developed city-wide FTTH network, provided by municipal public services (2009-2019)▪ 4G infrastructure▪ selective LoRaWAN infrastructure within the city, provided by St.Galler Stadtwerke (sgsw)

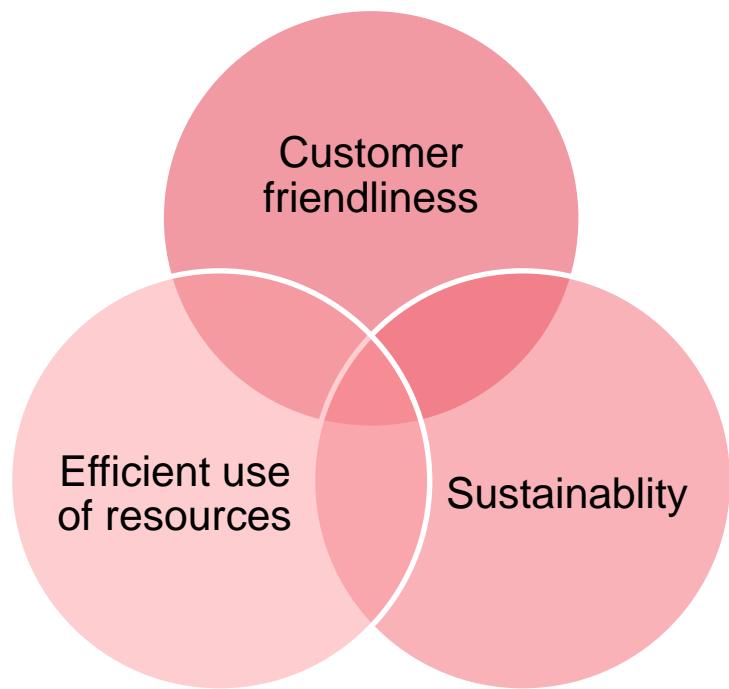
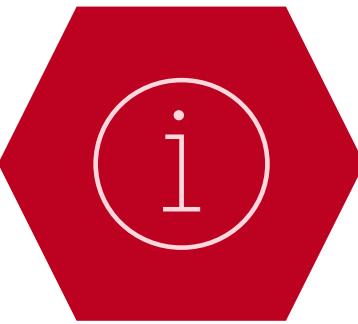
SMART CITY

Definition

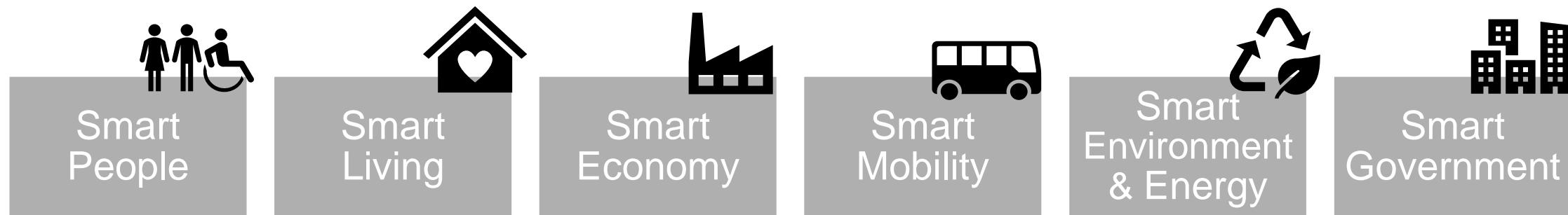
“In a smart city, technologies and data are linked to increase the **quality of life for residents** and the quality of location for businesses, while using less resources. Residents are an essential part of the developments and can develop, test and co-determine solutions for everyday life.”

St.Gallen, September 2018

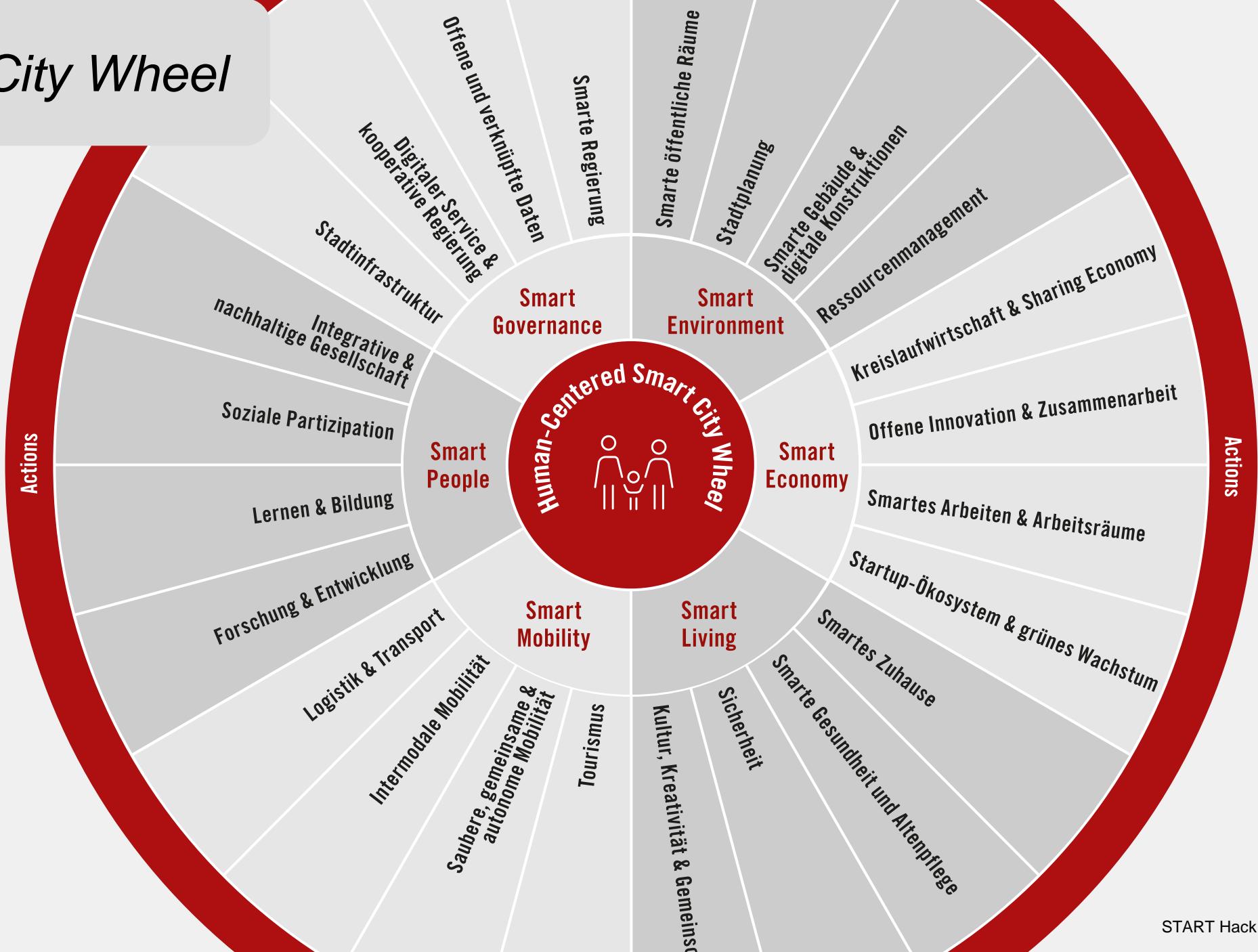
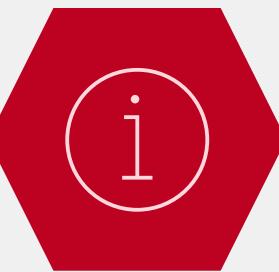
What we are looking for in our smart services...



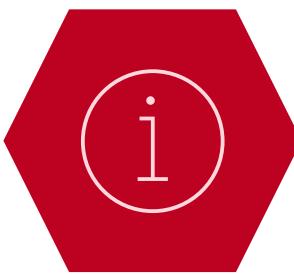
...and in which fields are we looking to implement these factors



Smart City Wheel



Activities in a Smart City



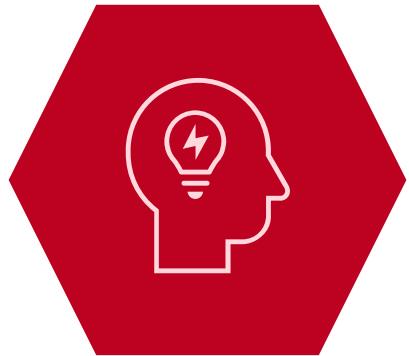
Versorgung / En...
Zur optimalen Or...
Versorgung und E...
(Energie, Wasser,...
die städtischen Be...
werk von über 70...
zentral ansteuern

An aerial photograph of the Swiss city of St. Gallen. The city is built on a hillside, with a dense concentration of buildings in the foreground and middle ground. The architecture is a mix of traditional and modern styles, with many buildings featuring red roofs. In the background, the city extends towards a forested hillside, and beyond that, a large body of water is visible under a clear sky.

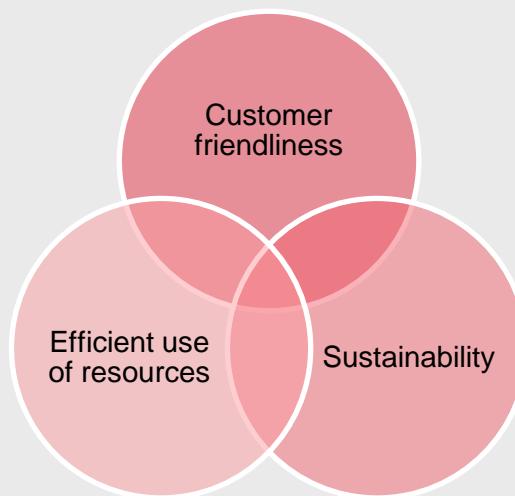
YOUR CHALLENGE

Your Mission

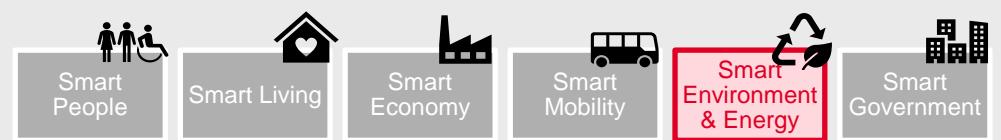
*Proposing innovative and smart solutions to optimize the process of bulky waste disposal for the **population** as well as the **administration***



By addressing one or multiple aspects



and ultimately work towards a smarter city!





Entsorgung St.Gallen

www.abfall.stadt.sg.ch
Telefon 071 224 50 50
esg.beratung@stadt.sg.ch

Datum:

8.3.2020

Warum wurde Ihr Kehricht nicht mitgenommen?

- Kein offizieller Kehrichtsack
- Überfüllter Kehrichtsack
- Abfälle an den Kehrichtsack gebunden
- Abfälle sind nicht brennbar
- Elektroschrott
- Keine Sperrgutmarke/n
- Zuwenig Sperrgutmarken
- Gegenstand zu schwer, obwohl mit Marke/n
-

Bitte nehmen Sie die Abfälle zurück und stellen diese bei der nächsten Abfuhr korrekt bereit.

Wartung der Container und Überfüllung

- Container überfüllt
- Fallschloss funktioniert nicht
- Container ist defekt:
 - Stützrad
 - Bremse
 - Deckel
 - Boden durchgerostet
 - Handgriffe defekt
- Container ist stark verschmutzt
- Kunde nicht bekannt, bitte anmelden
- Container nicht beschriftet

Bitte lassen Sie den Container reparieren oder reinigen. Melden Sie den Container an oder beschriften Sie ihn richtig.

Some services offer room for improvement...





Current state of the process: **Customer perspective**



Population as customer



Step 1

Determining how many stamps must be affixed to the designated bulky item



Step 2

Purchase of stamps at sale points



Step 3

Disposal of bulky waste on the doorstep in the morning of collection day

- Information is published on city website
- One stamp must be affixed per item or bulky goods bundle.
Maximum dimensions: 200 x 90 x 40 cm,
Maximum weight: 30 kg
- If the maximum dimensions of an item or bundle are exceeded, two or more stamps must be affixed.

- Stamps are sold for CHF 8.60 (VAT included) per piece

- Stamps can be obtained only in certain stores

- Each street belongs to a waste collection area
- Each area has its own collection dates

Current state of the process: **Administration perspective**



Entsorgung St.Gallen

Waste Disposal
Department
(ESG) as Service
Provider



Step 1

Collection of bulky waste with
the right amount of stamps



Step 2

Transportation together with
regular trash bags

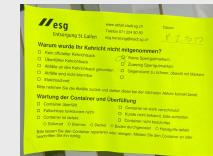


Step 3

Incineration at the waste
incineration plant

*If there aren't any or not enough stamps
on the bulky items:*

1. The collectors put a yellow sticker on
the items that indicates why they did not
get collected

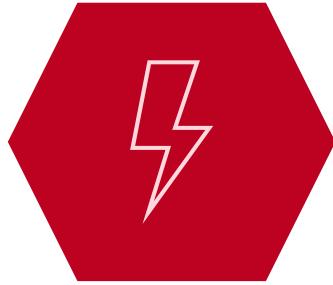


2. The following day, a **waste controller**
revisits that location and verifies that the
bulky items have been removed

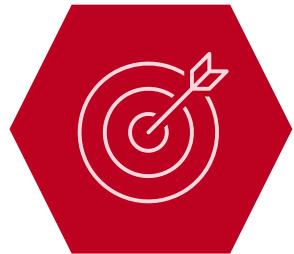
3. If the bulky waste is still on site, the
waste controller tries to locate the owner.
If he succeeds, he files a report against
the owner. If the owner is not found, the
bulky waste is collected and incinerated
by the ESG.

Challenges in the process

Customer friendliness, sustainability & the efficient use of resources are not always met in the process of bulky waste disposal



Where can **added value** be generated in the bulky waste disposal process?



Customer-friendly bulky waste disposal

- Quality of information on bulky waste disposal
- Improving the accessibility of waste stamps
- Easier payment for waste disposal
- Opportunity for Re-Use- and Sharing-Concepts



Process optimization in the waste disposal unit

- Saving human resources
 - in support hotline
 - In fighting illegal waste disposals
- Providing concepts for keeping usable items in the life-cycle
- Keeping the city clean from illegal waste

Sustainable practices



Resources

What are you working with?

Resources handed out to participants only

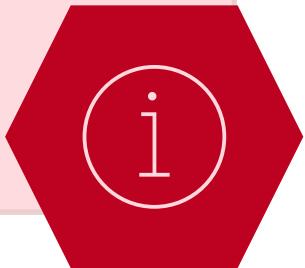
- Statistics on bulky waste stamp sales
- Statistics on bulky waste stamp usage and misusage (illegal waste disposal)
- Points of illegal waste disposal
- Waste collection routes as geographic data
- Pick up points on waste collection routes

Open data resources

- [Points of sale of bulky waste stamps](https://opendata.swiss/de/dataset/abfallarten)
- [Waste statistics](https://opendata.swiss/de/dataset/waste-statistics)
- [Waste bins \(underground\) for trash](https://opendata.swiss/de/dataset/waste-bins-underground-for-trash)
- [Recycling points \(glass, cans, etc.\)](https://opendata.swiss/de/dataset/recycling-points-glass-cans-etc)
- [Statistical population data in machine readable format](https://opendata.swiss/de/dataset/statistical-population-data-in-machine-readable-format)

Further (open) information

- <https://opendata.swiss/de>
- <https://daten.sg.ch/>
- German: [Abfallarten | stadt.sg.ch](https://stadt.sg.ch/abfallarten)
- Other languages: [Abfallinformationen für Fremdsprachige | stadt.sg.ch](https://stadt.sg.ch/abfallinformationen-fuer-fremdsprachige)



Judging Criteria

START Hack Criteria

Complexity & Technical Sophistication

- Usage of appropriate services and technologies

Design

- Usability of the solution

Viability

- Possibility of realizing the solution

Feasibility

- Maturity Level of the solution

Creativity & Innovation

- Surprise effect to the jury

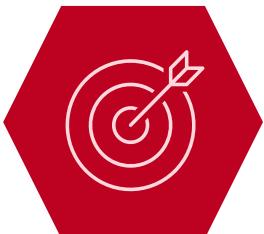
Presentation

- Communication of the solution

St.Gallen Criteria

Usefulness of your solution

- The case is a real world challenge that we start tackling this year.
The more useful it is for us, the better!







**THANK YOU FOR YOUR
ATTENTION!**

**ARE THERE ANY
QUESTIONS?**

