Cookbook:
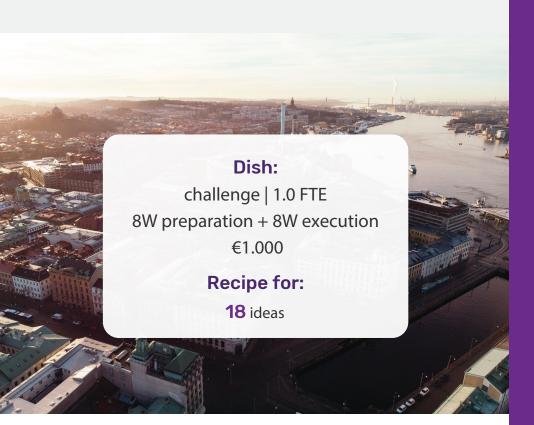## ideation tools to create successful (smart city) ventures

Gothenburg Smart City Challenge

Abstract

The Gothenburg Smart City Challenge is part of the Leading in a Digital World course lectured at Chalmers University of Technology in Gothenburg, Sweden. To help the City of Gothenburg fulfill its vision towards a Smart City, student teams developed a digital innovation and accompanying business model. In total, 100 Chalmers students, who are finalizing the third year at the Industrial Economics program, worked in 18 different teams to develop and present ideas over a timespan of eight weeks. Submitted ideas included everything from reducing food waste, improved mobility and air quality, water use management, a student accommodation platform, waste sorting and even connected urban farming.

Dish:
challenge | 1.0 FTE
8W preparation + 8W execution
€1.000

Recipe for:

18 ideas

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The Ingredient List

- **Budget**
  - Out-of-pocket printing costs for exhibition

- **Time**

  ### Preparation (8 weeks):
  - Course outline
  - Preparing materials
  - Presentation and announcement winner: 1 day – 22 November

  ### Challenge (6 weeks):
  - Kick-off
  - Workshops

  ### Showroom (9 weeks)

- **Resources**

  ### Types of organizations involved
  - Chalmers University of Technology (organizing team)
  - City of Gothenburg, multiple departments (challenger)

  ### Types of roles involved (mentors, organizing team, experts, etc.)
  - Organizing team
  - Judges for selection of ideas
  - Residents for validating ideas

  ### Location(s)
  - Classrooms at University
  - Virtual Exhibition Area via stadsutveckling.goteborg.se/smart-city-challenge/
  - Exhibition Area

The Preparation Method

• **Preparation (= Planning)**

The Gothenburg Smart City Challenge is part of the Leading in a Digital World course lectured at Chalmers University of Technology in Gothenburg, Sweden. The purpose of the course is its participants to expand their knowledge of leadership and strategic thinking in a global and digital world. The course enables students to develop an understanding and skills through applying the appropriate frameworks, concepts, and methods in groups in a Live Case project for the City of Gothenburg. In self-assigned teams of maximum six people, students are to conceive of and pitch a digital innovation to help the City of Gothenburg pursue its vision of becoming a Smart City as well as a circular and sustainable one.

Before the City of Gothenburg was invited to co-host the challenge, four lecturers worked on the course outline and framework of the activity. However, city officials already indicated their interest in joining beforehand. In the preparation, multiple departments of the City of Gothenburg were involved (i.e. urban planning, citizen wellbeing).

To help the City of Gothenburg fulfill its vision towards becoming a Smart City, with a particular focus on open data and citizen engagement, student teams developed a digital innovation and accompanying business model to convince the City of Gothenburg's jury, the citizens of Gothenburg, the faculty, and the rest of the class that the innovation is a great innovation for the City of Gothenburg. The innovation was to be based on the following guidelines: novelty, digital, smart and circular measurable impact, user-focused, self-financing and self-sustaining, and idea quality.

To create an initial idea, teams were provided with an Initial Idea Worksheet, based on Babson's Entrepreneurial Thought & Action and IDEO's design methodology. The worksheet focusses on potential resources, pain that an idea can solve, which stakeholders are involved, and which challenges and/or opportunities are addressed. During the challenge, teams had to collect market information to develop the innovation, as well as test assumptions. To be valid entries, in the innovation, teams must use at least one digital tool and one dataset made available by the City of Gothenburg. Teams were also encouraged to use the electronic datasets available at Chalmers University of Technology.

Serving instructions (= Event)

In total, 100 Chalmers students, who are finalizing the third year at the Industrial Economics program, worked in 18 different teams to develop and present ideas. Teams were self-assigned and consisted of maximum six people. Students were requested to aim for a diversity of backgrounds and skills in the team. Also, a request was made to strive for gender and background balance in the team's presentations. Each team had to select an innovation focus area and geographical location (one of the boroughs of Gothenburg), to make sure the challenge would result in wide range of different ideas. There was a limit of one team per innovation focus area and two teams per geographical area. Selection was on a first come, first serve basis.

As a final submission, teams were to prepare a one-page A0-sized poster in either Swedish or English pitching the team's innovation. Also, all teams needed to prepare a max. 3 minute video pitch. For two months the public was invited to vote for their favorite. Meanwhile, a jury including members from the city's various administrations and the teacher of the course, assessed the proposals.

The Leading in a Digital World course – containing the Gothenburg Smart City Challenge – started on January 22 with a kick-off lecture. The challenge details were explained, which were simultaneously also made available via the course syllabus. The kick-off was followed by several activities and deliverables:

- Innovation Area at January 28, 2020, during which teams were to select an innovation area and geographic location;

- Handing in Initial Idea Worksheet at February 17, 2020;

- Pitch Workshop at February 26 & 27, 2020;

- Draft Pitch and Peer Feedback at March 4 & 5, 2020;

- Handing in Final Pitch Poster & Video at March 12, 2020;

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During March 16 to May 31, 2020, the Innovation Pitch Videos were displayed online and the Innovation Pitch Posters were displayed at an exhibition area in the City of Gothenburg. The City of Gothenburg has created a jury to evaluate the innovations and selected the winners of the Gothenburg Smart City Challenge on May 31, 2020, together with citizens of Gothenburg.

Submitted ideas included everything from reducing food waste, improved mobility and air quality, water use management, a student accommodation platform, waste sorting and even connected urban farming. The proposal Matvinn, which simultaneously solves two issues, impressed both the general public and the jury when voting for the winner of the Gothenburg Smart City Challenge. By saving food waste from school kitchens and allowing students' parents to bring food boxes home, the climate impact of food waste can be reduced while the everyday lives of families are made easier. The app has not been fully developed during the semester, but the team has been in contact with a school in Angered, Sweden, that has shown interest in the project.

All teams were been encouraged to keep working on their respective idea, as further development would be needed to qualify for an incubation program. A limited number of teams have indeed done so.

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- **Review (= Evaluation)**

After the Gothenburg Smart City Challenge concluded, the program was thoroughly reviewed. Main feedback by the organizing team and stakeholders included:

- ➤ Although participation was mandatory, students were very engaged to join in such an activity, as it is concerning their own surroundings.

- ➤ The quality of the submissions did not meet the expected or hoped quality. Students would often use technologies in their idea without understanding them. Students need to be more critical about feasibility, especially in terms of technology used, privacy of users, and cost versus benefit.

- ➤ Teams were not really diverse, as all students have a similar background and are doing the same studies. It could also be that students have collaborated together in other projects. To diversify teams. It might be interesting to randomize group composition and see how this affects the submission quality.

- ➤ The challenges the students needed to work on were formulated based on a combination of topics and neighborhoods. This helped in diversifying the challenges students were working on. However, students found the goals of the City of Gothenburg not concrete enough, they could have been more specific.

- ➤ Students were encouraged to use the city's open data as this is one of the City of Gothenburg's goals, however, the open data portal was difficult to navigate. It would have been good to include a mandatory requirement for students to use at least one open data source and/or provide training to students on how to use the portal.

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