# Gen Z open data hackathon - civic innovation with digital natives: to hack or not to hack?

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#### Abstract

A hackathon is a form of social innovation in which participants can point out existing problems or social needs and offer solutions. Generation Z is supposed to be the most appropriate audience representing "digital natives". Gen Z open data hackathons are organized annually in Latvia. However, the organizer assumes that the goal of the hackathons - to raise awareness of OGD - has been achieved and there is no need to continue them. This study explored four case studies of Gen Z open data hackathons held between 2018 and 2021. Despite the widespread belief that young people (in Latvia) are indifferent to social and environmental issues, and the expected decrease in the diversity of ideas in times of COVID-19, the ideas developed are in line with current problems. The results indicate the need for their further organization as a source of innovation, feedback, and identification of opportunities for improvement.

#### Keywords

Generation Z, Open data, Hackathon, Sustainability, Social innovation

### 1. Introduction and Motivation

Open data hackathons are considered a creative approach to social innovation (also civic innovation), described by openness to create solutions in a new and creative way [1, 2]. These government-induced open data engagement initiatives [2] bring people with diverse backgrounds, experience, knowledge, skills, and expertise [1] together in one place for short periods of time, thus supporting intense bursts of creativity [3]. Open Government Data (OGD) hackathons are considered a great contributor to the uptake and adoption of OGD [4]. A recent study [5] found that OGD has a positive effect on millennial and Gen Z satisfaction with democracy, public services, trust in institutions and the economy. Gen Z is considered the one with the best digital capabilities [6] being so-called "digital natives" because they never experienced "life before the Internet", which, together with social media, became part of their daily life and socialization [7]. Moreover, [2] lists 5 factors that motivate citizens to participate in OGD hackathons, namely (1) intrinsic motivation, (2) extrinsic motivation, (3) effort expectancy, (4) social influence and (5) data quality, where 4 of the 5 factors are considered valid "by default" for Gen Z, and only the "data quality" is not. Thus, in line with the argument posed in [4] that citizen engagement is one move further than OGD use, this study suggests that Gen Z engagement may be the next step towards revealing and solving social problems and pointing

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out OGD challenges. The OGD hackathon for Gen Z participants has been held annually in Latvia since 2018, but the organizers believe that the goal of hackathons to raise an awareness of OGD has been achieved, and the debate about the need to continue organizing them is ongoing over the past two years. This study aims to point out the need to organize hackathons for Gen Z as a source of feedback, identifying opportunities for improvement, and generating ideas for the development of a sustainable and citizen-oriented smart city and knowledge-based Society 5.0.

## 2. Method

The knowledge base was built through a systematic literature review (SLR), which indicated a scientific gap in knowledge about the role of the Gen Z in open data hackathons. More precisely, SLR over digital libraries covered by Scopus and Web of Science yielded no results on this topic, and 39 studies covering either open data hackathons or open data in the context of Gen Z. These studies are diverse in nature, from testing idea during a hackathon as an experimental setting/environment, in which to gather feedback, exploring trends in a specific area such as software engineering or strategies for setting up a start-up, to conceptualizing the motivation for participating in a hackathon, etc. They mostly indicate high and diverse value of hackathons for organizers, participants, and society. In the practical part of the study, a qualitative approach is used by analysing data on ideas developed in open data hackathons for Gen Z, collected by the organizers of the hackathon, including the author as a mentor of this hackathon. Data on issues identified by participants were collected during the hackathon during a post-pitch Q&A session.

#### 3. Results and Conclusions

An analysis of ideas presented and implemented during the hackathons between 2018 and 2021 indicates the predominance of solutions that corresponds to the current situation in the country. 2018 was characterized by the predominance of mobility- and transport- related solutions aimed at simplifying route planning, parking, leisure planning. In 2019, an open data tool for a unified assessment of schools and a forecast of their development, and a solution to simplify the search for doctors dealing with rare diseases especially relevant for Latvia that year, were developed. While it was assumed that solutions developed in pandemic times will be purely Covid-19 related, only 3 focused on it only in 2020 and 2021, while in others it was seen as factor considered. The most popular were solutions that allow to choose a profession, climate change mitigation and agriculture solutions, flood and fire forecasts, air quality and pollution monitoring, waste management, regional development, and planning bicycle routes considering the infrastructure. The main critical feedback from participants was: (1) poor data quality, (2) outdated data, (3) poorly structured data, while the most reported issues are (4) the lack of "valuable data", and (5) the inability to use data through API. The feedback was collected in short discussions during Q&A sessions without the possibility of further communication and collecting more detailed feedback, which should be the case of hackathons, as this is a real opportunity to get the opinion of people who actually used the data from their finding, discovering, refining, with their further transformation into a prototype [4]. However, despite this, the collected feedback corresponds to the expert assessment of the OGD [8]. All in all, open data hackathons provide opportunities to innovate and create new services [2], and to collect feedback from real data users. The body of knowledge about open data hackathons is limited that is even more the case for Gen Z. They are, however, one of the most promising clusters of society described by more native digital competence. Raising of the awareness of the OGD should not be the only reason for organizing hackathons. This poster shows that Gen Z is able to determine critical areas of the current state of OGD, their usefulness and quality, which can bring value to society and OGD stakeholders - data owners, data publishers, portal owners. Moreover, the current body of knowledge about Gen Z and specificities of learning methods, which should differ from those used for previous generations [7], allows to make the proposition that a hackathon can be part of the educational process.

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