Small-town home care: Collaborative and digital planning in an ageing society.
The case of 'Location search for nursing care centers in Switzerland'.

Lukas Caluori*, Annika Kühn*/**
*Smart Region Lab, Lucerne, **CityScienceLab Hamburg

Demographic change is leading to an older and, in many places, more multicultural population throughout Switzerland, creating new needs in municipal planning. A specific challenge for municipalities is the lack of data on individual population groups (cf. Heger-Laube et al. 2023; Willimann 2020). This is particularly relevant for the area of age planning, as it is often not known where the current 80+ year-olds live, nor the next generation of 65–80-year-olds who could be dependent on help in a few years' time. This makes it difficult for care services to adapt to the situation and set up the optimal locations at an early stage (see Pellegrini et al. 2022).

The Cockpit Public Planning project of the Smart Region Lab in Lucerne, Switzerland, responds to this challenge by combining previously separate data sets from the areas of ageing policy, youth and family and neighborhood development and making them visually accessible immediately. The Cockpit Public Planning currently combines around 30 indicators, including people and building data as well as - brand new - national relocation data with origin and destination. This wealth of data allows unique correlations to be established between age structure, housing characteristics, relocation behavior and the locally available social infrastructure and to show mobile care services (known as Spitex in Switzerland) locations from where they can reach customers in need of care as quickly and efficiently as possible. The project shows to what extent the Cockpit Public Planning allows to develop, expand and evaluate this analysis together with the relevant stakeholders on site.
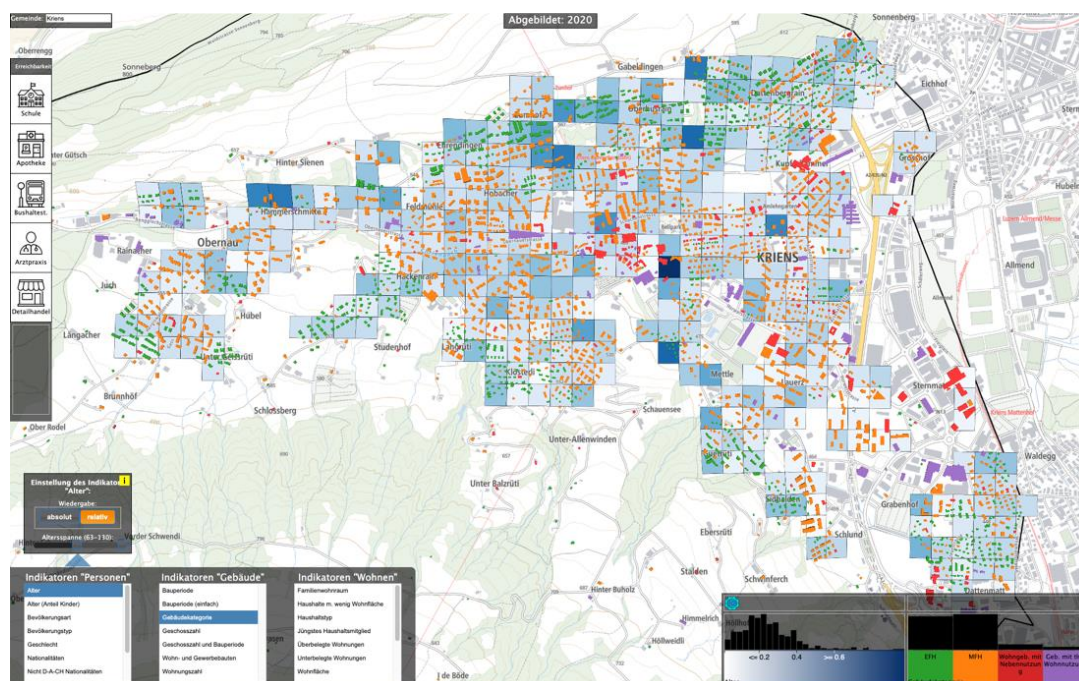

Fig. 1: Screenshot Cockpit Public Planning with spatial distribution of elderly people.
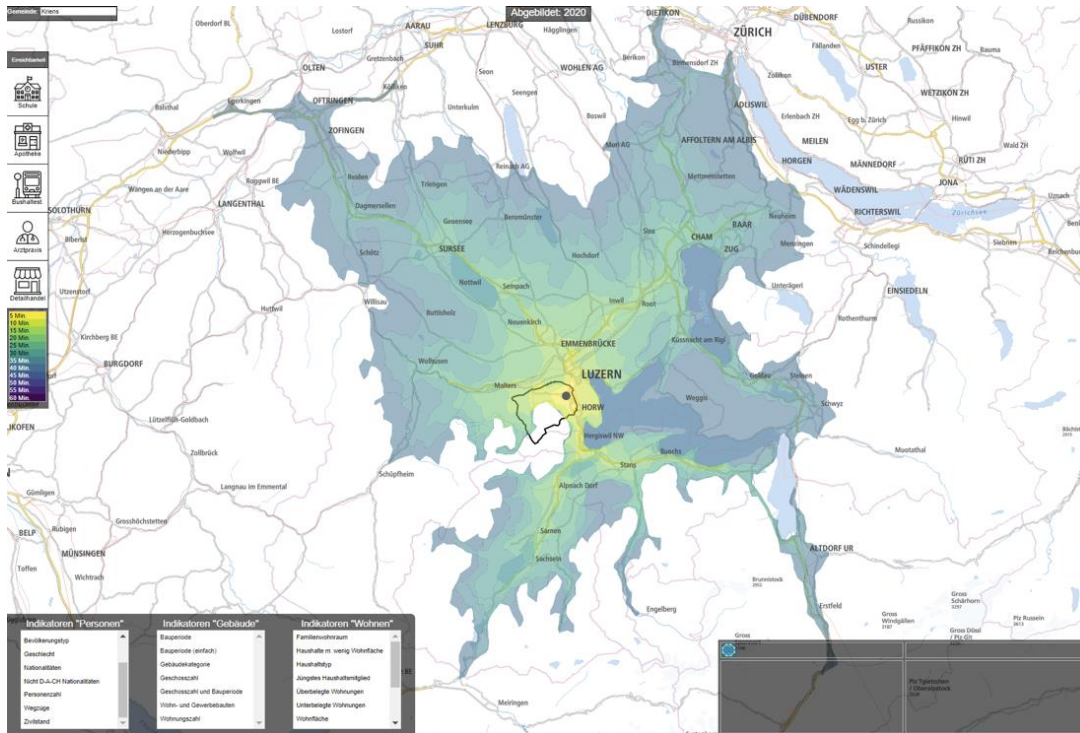
Fig. 2: Screenshot Cockpit Public Planning with accessibility analysis, by car within 30 minutes drive.

With the case just outlined, we would like to present the Smart Region Lab of the Lucerne University of Applied Sciences and Arts at the IPSC 2024 conference and discuss the opportunities and challenges that arise in the practical application of digital tools in spatial planning. To adapt the design of social infrastructures and supply systems accordingly, municipalities are dependent on reliable and well-prepared public data.

The Lucerne University of Applied Sciences and Arts provides this data in its Smart Region Lab (SRL): since 2021, millions of data sets have been automatically processed here and visualized on interactive, digital touch tables with object recognition.

Fig. 3: Interactive use of the touch table with physical tangibles.

This allows spatial analyses to be carried out in real time and scenarios to be simulated to support public (spatial) planning processes more comprehensively and - thanks to automation - more cost-effectively. The Smart Region Lab collaborates with the CityScienceLab Hamburg and develops all applications open-source and in the sense of a 'multi-stakeholder approach' (Weber/Ziemer 2023: 31) as collaborative tools that can be used in local workshop settings to support joint decision-making.

Fig. 4: Collaborative workshop in the Smart Region Lab.

It thus contributes to a very diverse discourse on digital city science (see Weber/Ziemer 2023), in which data, digital models and infrastructures play as central a role as their critical reflection (e.g. Townsend 2013; Kitchin 2015; Bauriedl/Strüver 2018). This focus requires an interdisciplinary and transdisciplinary approach that goes far beyond technology development. In the Smart Region Lab team, colleagues from the fields of social sciences and humanities, design, architecture, data science and development work together on the projects and incorporate additional knowledge from other areas of the Lucerne University of Applied Sciences and Arts as required. The findings presented in the use case are therefore based on data from the development process, but above all on participant observations and interviews at stakeholder workshops as well as feedback from users - all data on the latest technological developments in the field of digital decision-making tools in planning processes.

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