Augmenting urban mobility through digital information systems

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Supporting wayfinding for pedestrians and encouraging people to increasingly walk in urban environments can be achieved in various ways. We present an approach focusing on information and communication technologies (ICT) that can address both issues by enhancing the visibility of walking in an urban environment. In particular, the scientific project that frames our research is contextualised in the design and development of an information guide system for pedestrians in Vienna. This includes the re-landscaping of a defined district, encompassing a popular shopping area and its nearby streets, through tangible and digital information.

Prototypes of this information system, manifested as physical columns positioned in the street for local orientation, already exist and are subject to ongoing development. At the moment, they provide pedestrians with various information such as a map, local points of interest, walking distances and public transportation options. These information columns, so called steles, are an important source for us to explore digital enhancements and interactive features. It is our goal to elaborate ICT-based application scenarios and actual digital prototypes to provide walking people with the right digital information as well as possible. Core aspects are (1) the way in which people might interact with the steles or other urban elements and (2) make use of digital augmentations through devices they carry with them in everyday life.

In practice, we combine innovative approaches of urban mobility and urban ICT solutions with design methods in a user centered process. The digital enhancements for the analogue steles might address issues such as accessibility, inclusive access, usage of relevant open data and support local navigation as well as social, playful and commercial aspects, just to mention some of the options we are exploring. Through these digital enhancements, we want to raise the walkability awareness in an urban environment and enhance the visibility of walking as an equitable mode of transport.

The methods we used to elaborate and specify the requirements and use-qualities for such ICT-based guiding systems include qualitative approaches and design research methods. We have conducted (1) in-situ observations directly on the shopping promenade, (2) interviews with pedestrians, shop owners and chamber of economy representatives about their requirements and wishes, (3) and collated the data from which specially developed personas, scenarios and use-cases have been explored.

Our Urban Laboratory will happen directly in the seventh district of Vienna. Participants will have the chance to use and try out our technology probes and prototypes. The Urban Laboratory is an excellent chance for us to get useful feedback for further steps in design, interaction and development. At the same time, all participants will have an individual and unique experience by applying our newly developed technology in a real-world scenario. The Urban Laboratory will be supervised and accompanied by our project team and if necessary, we can provide everyone with the required technology.