The potential of VR street experiments for effective planning

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Transforming mobility systems for a sustainable future requires the implementation of mobility interventions in public space. This touches the interests of several stakeholders. However, usually only certain groups actively participate in such planning processes which may cause problems regarding the acceptance of changes. In our research, we discuss the potential of stakeholder-based Virtual Reality (VR) street experiments for making planning processes more effective   in terms of different stakeholders such as the public accepting the interventions thereby making them more sustainable. Achieving this requires an approach that uses appropriate means of communication among and between professional stakeholders, but also with the local public. As compared to conventional media such as plans, maps and printed 3D visualizations, VR allows users to experience planned interventions in an immersive way. This way, people may more easily understand changes which may enhance attention and activation and enables discussions about advantages and disadvantages.

For testing this approach, we investigated how to increase the attractiveness of a public transport station and its forecourt in Berlin, Germany. By involving different stakeholders, we explored which simple measures could be implemented to entice people to reach the station using active or shared transport modes. Combining a stakeholder workshop, a field survey, and a VR street experiment, we were able to reach local citizens and different professional stakeholders. The first workshop involved experts from the district municipal administration for climate protection, and for impaired people, mobility providers, an architect, and lobby groups for pedestrians and public transport. Applying SWOT analysis, the stakeholders identified areas and ideas for improving the station surroundings targeted at increasing the attractiveness of public transport. Next, a field survey addressing local public transport users and residents (n = 250) showed which characteristics in the station and in its surrounding are considered important, e.g., cleanliness and safety, greenery, seating, aesthetics, and short and safe access to the station. These characteristics were used to create realistic 3D visualizations of e.g. greenery, street furniture and signs which were then integrated into scenes of four 360°-photos taken in the station's surroundings. Subsequently, we invited local people to take part in a VR street experiment. Participants wore VR-glasses to experience different visions of the forecourt, i.e. scenes without and with the 3D-interventions and gave their opinions on the redesign ideas in 'digital walking interviews'. As a result, participants said they 'enjoyed' it to experience the redesign through VR and it helped them to better understand possible changes showing the method's potential to activate citizens. However, we also found VR to be costly to implement.

Following this, we plan to further explore VR's potential for communicating planned interventions in another stakeholder workshop where planners from the district administration will be shown the VR street experiment and discuss the eligibility of VR as an instrument for enhancing participation. We expect to learn advantages and also barriers to employing VR compared to conventional planning communication methods. In the session we will discuss conditions under which the application of VR can make planning processes more effective.