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STIPENDIEN

Information Visualization in Multi-device Ecologies

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In museums, almost everyone has their own mobile device (e.g., smartphone or tablet) with them. In addition, many museums include interactive exhibits (e.g., multi-touch tables), but the visitors' own devices are rarely used as part of a device ecology. On the other hand, museums and libraries have a huge number of objects which cannot be shown in exhibitions.

Data Visualization can help here to make these data visible and searchable. Currently, there are no suitable concepts to seamlessly link different surfaces in museums. Our approach is to integrate the visitor's own device in a multi-device ecology (MDE) in the museum to enhance the visit through interactive data visualization.
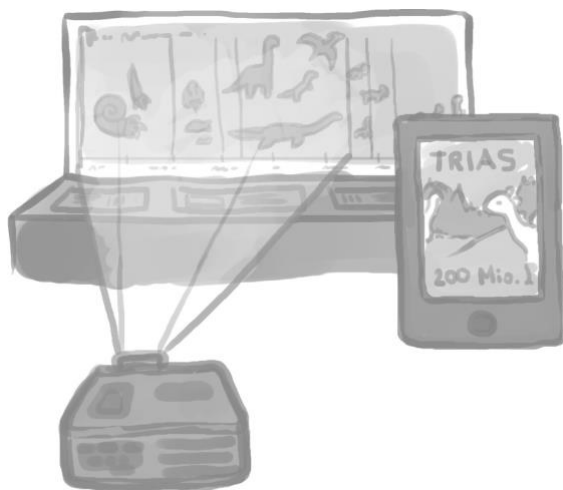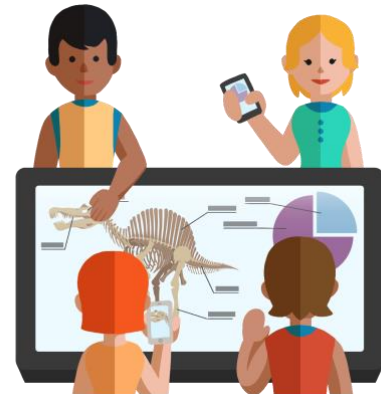

Figure 1: This idea combines physical and dynamic visualization. Having for example a timeline on the wall which is palpable for visually impaired. If you come close with your own device, you can explore a different dimension of the data. Using projection mapping, a beamer projects current data (e.g., preferences of visitors) onto the physical visualization.

During the year of stipend, I researched the state of the art in related fields including interactive exhibits in museums, data visualization in MDEs, data visualization on mobile devices and situated action models.

In addition, we (within the research project MEETeUX) developed the service design, basic ideas for MDEs in museums (e.g., see Figure 1) as well as the technical concept. We built up the basic technical setting addressing smartphones (iOS and Android), multi-touch tables and large vertical surfaces. The software code of the project is published in several repositories on GitHub (https://github.com/fhstp, license: BSD-3-Clause).

The finished thesis will be published at the netidee website under CC-BY-SA.