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Review PhD Thesis Kateřina Horák Goryczka: IA Stijl: Výhody interaktivního responsivního systému v interiéru domácností

The PhD thesis of Ing. arch. Kateřina Horák Goryczka deals with the theme of interactivity in architecture, in particular the relation between changing lifestyles, domotics, and attitude of the inhabitant. The research is based on the observation that the lifestyle and priorities of the generation known as Millennials is in many ways very different from older generations. This is a phenomenon that is still being investigated. Although many details are not known yet, it is clear that their acceptance of modern ICT leads to different perception, relation, and use of everyday space. This research sets out to investigate this.
The method of the research is through the realization of a domotics prototype, called IA Stijl. IA Stijl is a locus of information that summarizes all ongoing activities of the inhabitants of a home (residents and visitors). Since the television set forms a focal point of many contemporary households, the prototype works from the television. The interaction style is based on gamification, an approach in User Interaction research & development that applies principles of (computer) games to improve information transfer and generate higher levels of engagement. Rather than showing simple statistics, IA Stijl shows the energy performance of each person on a racing track, with the background giving additional information about the overall performance of the household.
Ing. arch. Kateřina Horák Goryczka implemented the IA Stijl prototype in her own apartment. Methodologically speaking, this has the disadvantage that it is more difficult to do controlled experiments on single parameters of the system. However, it does have the significant advantage that it allows the complex capture of the experience of people working with IA Stijl. To realize the IA Stijl prototype, many technical efforts were necessary to capture all the data, which was successfully completed. The IA Stijl prototype records the energy consumption of all parts in the house, and transforms this information into the race-track style display on the television set.

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It must be noted that the realization and the next step of the research, experiment with people, were heavily influenced by the occurrence and ongoing pandemic of COVID-19 in Czech republic. For the realization of the prototype it meant a serious delay. For the experiment, it meant that it was impossible to carry on long-term observations of the effect of IA Stijl on people. For a long time it made it impossible to have test persons use the system. Ing. arch. Kateřina Horák Goryczka elegantly solved that by problem by focussing in the experiment on a task that is relatively short of duration but also offers a high degree of variety in the energy consumption patterns of the participants. This is the kitchen experiment, where participants are asked to prepare a meal. Depending on their cooking style, energy levels varied widely, and these results were fed back into the IA Stijl prototype.

The results of the experiments show, that the gamification mode of the IA Stijl prototype leads to very strong impressions by the test persons. We may conclude from these results, that the IA Stijl prototype indeed acts as a locus of meaningful information for the inhabitants of that space.

To conclude, the PhD research by Ing. arch. Kateřina Horák Goryczka has resulted in the realization of a working prototype, IA Stijl, realized in a historical building, that records and displays in an innovative way energy usage of people in the house. Based on this review, I therefore support the thesis to be passed, and give the mark 'A'.

Thank you for your consideration.

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