Analysis of the UX of PLM software products

Components of the User Experience (UX)
Thüring and Mahlke 2007

The GUI of the OpenPLM - one of the factors shaping the UX.
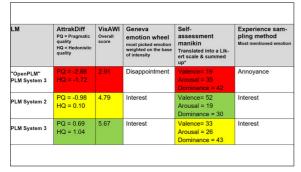openplm.org 2019

LM	AttrakDiff PQ = Pragmatic quality HQ = Hedonistic quality	VisAWI Overall score	Geneva emotion wheel most picked emotion weighted on the base of intensity	Self-assessment manikin Translated into a Likert scale & summed up*	Experience sampling method Most mentioned emotion
"OpenPLM" PLM System 3	PQ = -2.88 HQ = -1.72	2.91	Disappointment	Valence = 19 Arousal = 35 Dominance = 42	Annoyance
PLM System 2	PQ = -0.98 HQ = 0.10	4.79	Interest	Valence= 52 Arousal = 19 Dominance = 30	Interest
PLM System 3	PQ = 0.69 HQ = 1.04	5.67	Interest	Valence = 33 Arousal = 26 Dominance = 43	Interest

Evaluation results of the three analyzed PLM tools using the five different methods.
Own presentment

Introduction: The positive impacts of a well-designed User Experience (UX) have been proven on several occasions for a very broad spectrum of prodcuts and use-cases.
In the past serveral tools have been developed to evaluate and systematically improve the UX for certain products. Hereby the focus was mainly on the use of websites or other software tools. These tools are rather generic and are not commonly used when it comes to the evaluation of a Business Software such as an ERP or PLM-system.
The PLM environment of an industrial company is one of the key drivers of efficiency and flexibility. It also contributes heavily to the innovation capability. Thus, it is a crucial element for long-term business success. The different elements of the UX have been proven to impact the motivation and overall interaction speed significantly. This leads to the conclusions, that UX overall has a direct impact on the efficiency and the motivation of employees and hereby contributes to the business success. Which makes it highly relevant when it come to the selection and implementation of a tool and the corresponding processes.

Objective: The overall goal of this project was to find suitable methods to evaluate the UX of PLM products. For this purpose, several different UX-evaluation tools had to be analysed and tested in the context of PLM. On the base of these initial tests an improved evaluation methodology was to be proposed and initial improvement area for the UX of the tested PLM products had to be described.

Result: As part of this project five suitable evaluation methodologies have been selected.
These have been applied in self-experimentation using six PLM-use-cases in three different PLM software tools. For each of the PLM-products an in-depth analysis of the results has been conducted. On the base of these results generic improvements have been proposed.
Further, have these results been used to design an extended study to gain further insight and verify these initial results. The intial tests enabled the further selection of suitable and insightful tools for future use in the context of PLM-systems.
Conduction the designed experiments could help to gain important insights. Hereby the time related aspects (learning over time) and the evaluation of the different traits of the users, would help to propose further improvements. Eventually, could these results even lead to entirely new ways of PLM system and user interaction.