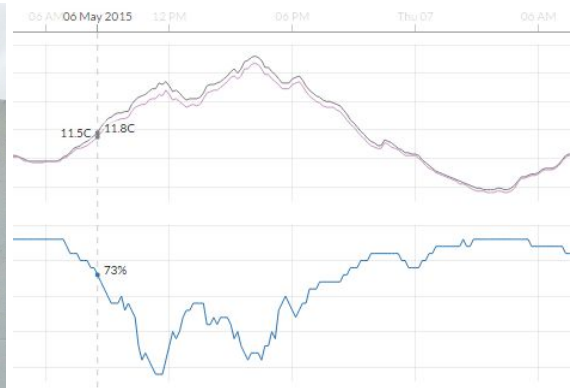# Producing working and usable software fast

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Is it possible to create usable software quickly and effectively? To find out, we combined practices of good usability design and fast software development in a project at Axis Communications.

Developing usable software is no simple task. The software must be well designed and solve a real problem for its users. At the same time the software's inner workings must be engineered in a good way. Preferably, the process of producing this software should be fast and cost effective. Many software projects fail, either by delivering an unusable product or by going over budget. In our master thesis we explored a practical approach to software design and coding that tries to solve these issues.

We applied this approach to a software project at Axis Communications. Our task was to develop a website for Axis global testing live sites. These live sites are physical sites located around the world in different climate zones. Each site consists of a number of Axis cameras and a weather station connected to a local server. The cameras are left there so that the physical impact of the environment can be monitored and studied. By doing this Axis makes sure that their cameras are able to handle harsh weather conditions in the real world, not just in controlled test chambers.

Our approach was to divide the project into four repetitions, each consisting of a design phase, a coding phase, and a usability evaluation phase.

During the design phase, which lasted for five days, we tried to solve design issues. We conducted interviews with the users and had observations sessions on day one. Solutions to the discovered problems were explored in day two. On day three we combined our ideas into a single solution. During day four we made a prototype of this solution. The usability of this prototype was tested on real users at Axis on the fifth and final day.

The coding phase lasted two to three weeks and took us from a design prototype to a working website. The usability of the website was evaluated and we brought the newly discovered problems with us to the next repetition.

Throughout our project we used this approach to solve design problems at an astonishing pace. By incorporating the design phase into a repetitive process we were able to produce a working product very quickly, which we could continuously add and improve upon.

The process resulted in a usable product, but we were sadly not able to fully implement our envisioned solution. We do however believe that by following our process model we were able to not only produce good design, but also well written code. Hopefully this means that the product can be built upon and eventually fully realized.

The process model turned out to be a powerful and effective tool. Despite the fact that we couldn't completely evade the problem of going over budget, we think it could be of great benefit to the software engineering process.