

Improving new product development teamwork

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ABSTRACT

KPN Research is working on improving new product development: speeding up the process and improving the match between technology and market. KPN Research experimented with a simulation of a start-up company, which used a new method for product development and teamwork. We recommend creating a multi-disciplinary full-time team and conducting consumer research throughout the project. Furthermore, we recommend starting with a clear idea of the desired end-result and creating and discussing interim results. This speeds up the process and improves the match between technology and market.

Keywords

New product development, teamwork, start-up, results.

PROBLEM STATEMENT

It is the task of KPN Research to develop new products for telecom operator KPN. Two problems are encountered in this process. Development lead times are sometimes long, so that opportunities with a small time window are missed. And sometimes there is a mismatch between the technology of a new product and the needs of the market, so that the product is unsuccessful.

EXPERIMENT

KPN Research set up an experiment in order to learn how to make new product development faster, and to improve the match between technology and market. This experiment simulates a start-up company within KPN Research: "The Garage". The intention is to combine the benefits of a small company (entrepreneurial, business focus, relation with customers) with those of a large company (established, financial resources, diverse skills).

The Garage took up the challenge to develop a new product from idea to prototype within six months, and to prove with a market trial and a business case that technology and market match up well. The team consisted of five students, the author was project leader and coach, and several other KPN Research employees also coached the team members.

This paper presents the method, practical experiences and recommendations for solving the problem statement.

METHOD

The Garage executed and tested a partly novel method, consisting of four elements, based on earlier experiences of the author [1] [2]:

- Team members have different backgrounds: technology, psychology, economics, and industrial design. And other expertise is available within KPN Research. These different backgrounds complemented each other.
- Team members worked full-time on the project and they worked in one space. This improved dedication, team spirit and co-operation.
- Team members conducted consumer research throughout the project: needs research interviews, concept testing interviews, and a market trial with the prototype. This helped to focus on the target group.
- The project started with a demo of the end-result, and team members created collective interim results each month. These result iterations speeded up the process and improved the end-result.

RESULT ITERATIONS

This paper focuses on 'result iterations', because this aspect was novel, most challenging to execute and most valuable.

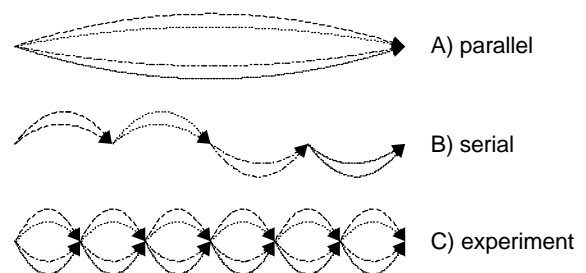


Figure 1

The aim of 'result iterations' is to combine the benefits of parallel and serial processes, see Figure 1. From left to right runs the time dimension, and the arrows represent different disciplines/activities: technology/systems design, psychology/marketing, economics/business case, and industrial design/user interface.

Parallel processes can speed up the overall process because people work simultaneously on different aspects, but there is a risk that, for example, technology and market do not match at the end. And serial processes can improve the quality of the end-result because each activity builds upon earlier activities, but when, for example, conditions change some activities must be re-executed. In the experiment, the team members worked simultaneously on different activities (parallel), and delivered collective interim results (serial).

If the product development process is viewed as a decision making process, then the amount of information available for making decisions usually starts at a low level and grows steadily, whereas the implications of these decisions start large and reduce steadily. Creating collective interim results speeds up the decision making process and improves the quality of the decisions: information is made available early in the process and helps to make decisions timely.

What went well

The project started off with a demo of the end-result, in the form of an animation that showed the new product in a daily life context. The demo contained initial ideas for marketing, technology, user interface and business. The realism of the demo and the integration of aspects yielded a shared framework and directed creativity.

The initial demo presented several possible functions, and the team members had to determine in the first month which functions to include in the first release of the package. They created a video clip that shows how they themselves use the (fake) product, see Figure 2. The process of making this video helped to detail the concept and to focus discussions.



Figure 2

The team members detailed and tested the concept and worked simultaneously on marketing, technology, user interface and business. Each month they presented the work-in-progress to experts of KPN Research, from whom they received feedback that they could use it immediately.

All team members participated in the consumer research, in which successive demos and prototypes of the concept were used. For example, one took the interview and another took minutes or operated the prototype. This helped to focus on the target group and to match technology and market.

What was difficult

The team members were encouraged to share and discuss interim results with each other. Discussing early ideas, doubts and objective facts may improve speed and quality of decision making. But the team members found it difficult to share work-in-progress and to discuss this critically. This attitude may be changed by rephrasing "show what you have done, so we can judge it" into "we as a team want to make progress and work carefully, can you please help to reduce uncertainty by sharing your findings so far?"

Creating interim results in the domain of technology was difficult. Because of the complexity (combining telephony, speech and internet), the engineers would like to work with a 'waterfall method': from specification to implementation. But co-operation with the other team members required producing interim results that shows what technology can do and cannot do. They chose to do both: they delivered pictures and demo's in successive steps, and they worked on the implementation in successive steps.

CONCLUSIONS

After six months the project had delivered a prototype, user interface, and draft business case and marketing plan. This is faster than comparable projects. The findings of the market trial and the business case suggest that the new product has a better match between technology and market than comparable new products.

RECOMMENDATIONS

In order to improve new product development, we recommend creating a multi-disciplinary full-time team and conducting consumer research throughout the project. Furthermore, we recommend starting the project with a clear idea of the desired end-result, and creating and discussing collective interim results.

In order to encourage and facilitate these 'result iterations', we recommend creating a culture or atmosphere in which team members dare to share and discuss interim results, and choosing appropriate methods and tools to create interim results in the technology domain. These two issues need further research and discussion.

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