

Digital Health – Part III: Good design

Autor : Reinhard Riedl

Datum : 24. Oktober 2016

In this series of short papers recommendations for policy goals in digital health are outlined. These recommendations have been derived through the exchange of thoughts with scientists, experts on healthcare policy making, and strategy specialists. Recommendations in part III address design aspects of digital health.

Recommendation III: Take care of a good design

Good design creates value. This value is materialized during usage. It may take different forms, but in the context of digital health, we are primarily interested in those forms of value which contribute directly or indirectly to the health of people.

There are two seemingly contradictory aspects of good design, namely that of long term value and that of situated value here and now. Experience tells us that we should treat it as a warning signal if both perspectives contradict each other and as a howling siren if either of the two perspectives is ignored. Good design creates high values both temporarily and long term.

One can look at design also from the different perspectives of its stakeholders. Again, it is a warning signal, if values created do not comply with investments and changes needed. If a stakeholder group has to spend efforts and changes its work habits, but does not get significant value out of using a new solution, than it will (most likely) block its usage and we should conclude that the solution was badly designed.

A third multi-perspective way to look at design is to take disciplinary positions. A good design is one which is good from the perspective of each relevant discipline and which is good when perceived as a transdisciplinary solution. But more than that, a good design is one which is easy to understand from each involved discipline and whose transdisciplinary nature is likewise easy to understand. This is because good design relies on good disciplinary practice and dismisses bad disciplinary practice – and good disciplinary always clearly reveals its ideas (although a full understanding of great practice may indeed be hard to grasp).

Example: The problem with patient files in e-health

This all seems pretty obvious. Unfortunately, it is the opposite of established practice in many areas of e-health. There, established practice is to focus on one usage scenario or on no usage scenario at all, to focus on one stakeholder or on no stakeholder at all, and to design from one discipline's good practice or to ignore good practice at all. This is the main reason why the take-up of e-health solutions is so slow.

Let us consider as an instructive example the patient file H-FILE (pseudonym) in Country X. It has been designed years ago, but its broad usage has been blocked many times. Believe it or not, people seriously told me that this was a security problem. Once security was good enough to guarantee privacy protection, they assured me, all hindrances would be removed. And these

people had academic degrees and enjoyed a good reputation in their respective areas of work. But this is not the end of the story. Some people even told me that the problem with patient files was that the undertaking was not centered enough on the patients. Building patient files with a strong focus on the patients would remove the barrier for a better take-up of health.

To put it bluntly: Firstly, security and privacy are very important, but there will never be a solution which is 100% safe. Secondly, of course it makes sense to build a patient file solution around the data of a patient (you got that right, guys!) but, thirdly, it does not make sense to focus the design on the patient as its main user, since in real life the main users will be health professionals. For them, H-FILE will create additional supervision, which is never discussed openly in the H-FILE case and thus has turned into the huge unknown threat in the background. In this type of setting, and unfortunately it is not a unique one, nobody will ever tell you why they oppose the new tool. Instead, they will point to problems that do not point back, problems such as security and privacy. Putting the patient even more to the center will not help at all.

Principles, patterns, and emotions

Getting back to the future we all should go for: Good design is NOT THAT DIFFICULT as it follows principles derived from good practice and reflection: For the design of information and computing technology (ICT) solutions, these principles reflect the history of progress in ICT, dealing with complexity on the problem side, and situatedness and architectural abstractions on the solution side. Professional ICT design further can rely on proven processes and perspectives involving all concerned disciplines and it can build on proven solution modules.

So far for the good news. The bad news are: In successful real world practice, good design always involves both, gut feeling and disciplined application of design instruments and processes. There is a whole bunch of experts who try to replace gut feeling by rules or tools, but my experience is that they never solve the hard problems. The hard problems are solved by thinking which is driven by gut feeling which has been developed through emotions. It is possible to learn how to maximally exploit one's emotions, but one needs to have them in the first place. Very few people have emotions about ICT-based solutions, which is the real tragedy of ICT. For digital health design, one should in addition have emotions on healthcare, health administration, and many more issues.

Knowledge, skills, and attitude

The above amounts to a more fundamental observation: Good design requires knowledge about good practice in all the relevant disciplines – that is in the case of digital health as a minimum healthcare, health organization and administration, health politics, many aspects of computer science, and law. It further requires skills to apply the knowledge in an integrative and creative way. And finally it requires the right attitude, i.e. a mixture of modesty and of commitment to good design, in order to be willing to take the burden of achieving good design.

Good design thus means mastering all kinds of objective challenges, including those created by the behavior of others, and one's own ego together with one's scientific second self. The latter is a specifically hard problem for researchers because on the one hand good design requires a lot of time and on the other hand it is hard if not impossible to publish it in journals or conference proceedings. Nearly nobody in science is interested to read about it and only very few reviewers

are able to judge on it. But still, good design is the essence of real world success as it is mandatory for creating value. So we should learn to master its challenges.

My personal view

Let me conclude with two personal messages to those of you who want to achieve good design despite of its challenges. One message is: Whatever usage may be in the focus of your design, in 98% of the cases it will be necessary to provide high value to health professionals – that is something which enables them to get better as professionals. Help them improve their skills and their work – for this purpose you should understand their work, their skills, and their shortcomings – and they will pay it back through take-up of the new solution! The other message is: Whoever told you, that good ICT design does not require deep ICT knowledge, it was not exactly the truth!