Act First, Do the Research Later
Don Norman

Think before acting. Sounds right, doesn't it? Think before starting to design. Yup. Do some research, learn more about the requirements, the people, the activities. Then design. It all makes sense. Which is precisely why I wish to challenge it. Sometimes it makes sense to act first, think afterwards.

In the real world of product development, time is always short and budgets limited, so it is almost impossible to start with research. "Yes," the product manager will say, "I know we should do some research first, but we don't have time, we are too far behind schedule. But for the next project, we will start with research, OK?" It never happens. The next project will also start out with no time, behind schedule. In fact, let me create a law:

Norman's Law of Product Development: A project is behind schedule and over its budget the day it is started.

Today we teach the importance of doing design research first, then going through a period of ideation, prototyping and iterative refinement. Lots of us like this method. I do. I teach it. But this makes no sense when practical reality dictates that we do otherwise. If there is never enough time to start with research, then why do we preach such an impractical method? We need to adjust our methods to reality, not to some highfalutin, elegant theory that only applies in the perfect world of academic dreams. We should develop alternative strategies for design.

Why it is not necessary to start with design research

Here are five very different arguments to support the practical reality of starting by designing, not through design research. First, the existence of good design that was not preceded by research. Second, the argument that experienced designers already have acquired the knowledge that would come from research. Third, the research effort of a company ought to be continually ongoing, so that results are available instantly. Fourth, and most controversial, research might inhibit creativity. And fifth, when the product is launched and the team assembled, it is already too late.

Case studies of products done without design research.

First, we can simply look at the large number of existing products, many of them perfectly reasonable, sensible and even inspiring and laudatory that were done without design research. This is an existence proof that design research is not always necessary. Academic designers might prefer to overlook these examples, but ignoring them does not make them disappear.

Experienced designers have a lot of pre-existing knowledge.

Second, we can recognize that experienced designers never start from zero. Seasoned professionals have a lot of prior experience. This provides a large body of knowledge that is available without requiring new studies, new research. This is why professionals can act immediately at times.

I find that in my design consulting, I will sometimes skip the research phase. Act first, then analyze and think about it afterwards. I can get away with this because I did the necessary research over the preceding years: I have a lot of pre-existing knowledge.

In fact, this pre-established, existing knowledge is so important that it is codified in the handbooks and charts of many fields of practice. Ed Hutchins (in the department of cognitive science, University of California, San Diego, trained as an anthropologist and author of the influential Cognition in the Wild) first sensitized me to the critical importance of this knowledge. He called it "pre-computed knowledge," and gives as examples, maps and tide tables, handbooks and much of our equipment, from manual sextants to sophisticated computational tools. These all provide answers at the time they are needed without requiring

the user to do studies or research. All fields have their bodies of pre-existing knowledge, thereby allowing skilled practitioners to act without apparent research or planning. That is, others have done the thinking for us: we can simply act, replying upon the existing wisdom to guide us.

The field of industrial design doesn't have many tables or charts, handbooks, or computer tools, but we do have a lot of accumulated knowledge.

The researchers should always be studying the domain.

In an earlier article, "Why doing user observations first is wrong" (published in ACM interactions, the computer science magazine for human-computer interaction), I argued that we should not even bother to try to start with research. Instead, design researchers should always be studying the relevant issues. After all, the design researchers in a company know what kinds of products the company is interested in. Then when a project starts, hey guess what, the research has already been done.

Too much research can inhibit creativity.

The fourth reason is bound to be the most controversial. Too much research, I firmly believe, can inhibit imagination and creativity. I believe this so strongly that at a recent client meeting for a major company, I got upset that the design team was doing so much research. I feared they would never actually do anything, and if they did, they would be completely hampered by all that research. "Stop thinking and start doing," I admonished them. "Build things. Sketch things. Try out your ideas. Then sit back and analyze. Do, then think."

When I was a professor of cognitive science, I learned that reading and becoming expert at the existing research literature created a delicate tradeoff. Too much knowledge could be harmful. The point of my students' PhD dissertations (and of all my own research) is to make a significant advance in the understanding of a topic. Read too much of the existing literature about what previous researchers have thought and done and you will follow in their footsteps. This means that you will also encounter the same dead ends. Without knowing the literature, you can be creative and often discover valuable new insights and directions. But, and this is a most important "but": whenever I do this myself (which is frequent), and whenever I urge my students to do this, I then require extensive literature review after their work has gotten underway. This is to avoid what has already been done, to avoid falling into traps that others have already described and to avoid being ignorant when it comes time to explain to others what you have done. Deep research, thought and understanding is always required—but at times it is most beneficial if it comes after the initial acts and decisions have been taken.

When the product is launched and the team assembled, it is already too late.

The decision to launch a product and a team to produce it already incorporates a decision of what is to be built, usually accompanied by a timetable, a marketing directive, a target price and delivery date. Quite often the decision is accompanied by a list of requirements.

But one important reason for design research is to influence and shape these decisions, to suggest new approaches and to ensure that real needs of the intended audience are met. The place for design research is at the executive table where the decisions are being made. Designers should be there with just as much influence as the marketing team, the engineers and the business analysts. Designers will not earn their place at the table until they are able to produce relevant arguments about the market potential, much in the style that marketing representatives do so well. We need the results of design studies to be accompanied by spreadsheets calculating the potential sales, with an analysis of the potential lost opportunities if the recommended path is not followed.

If designers are not at the decision-making table, then they are left out of the loop in making the critical design decisions. Once the product team has been launched the critical decisions

have already been decided upon. It is too late to introduce research, whether from ongoing studies, from the experience of the design team or elsewhere.

Where research—and caution—is required

What about situations where the designs have critical importance, with large-scale impact, so getting them wrong can do real damage? Obviously we must exercise caution when our actions can have large-scale impact. Any decisions, actions or trial designs in situations of high importance and impact should always be tried out on a small scale first. Skipping the research phase is only appropriate when, as I have said, the people doing this already have considerable experience with the situation. They already have considerable pre-existing knowledge. You could say that they have already done the research.

Summary

Let me summarize. Yes, I believe that research is important, but it does not have to be done at the start of a design project. It can be done far ahead of time, or even just afterwards. Good designers should always be engaged in observation, in mentally reviewing and creating artifacts, in sketching, writing, planning and thinking. As a result, when the time comes to act, they can do so without appearing to need research, but only because of the accumulated wisdom they draw upon.

Obviously, if the domain is completely unfamiliar, the designer must learn to be a student, to absorb the relevant domain knowledge quickly, working jointly with the experts in that domain. But the linkage between research and design activities need not be a temporal one. Much time can separate the activities, and the temporal ordering can even be reversed at times.

Act first, research later? Well, not quite. Always be researching. Always be acting.

References

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