

## Open to end users

### Where are the end users in the innovation process?

Advanced technologies, UMTS and WiFi, new processes, cost reductions, business process re-engineering, regional cluster policy, public-private partnerships, intellectual property, partnering with competitors, suppliers and knowledge producers - all of these are important. But aren't we forgetting someone? Where is the end user? Can we still see the end user amidst the *technology push*, all the different interests and the big bucks? Who will ultimately be using – or not using – these innovations? And *why*? Do we know these people? What are their needs?

These questions touch precisely on the weakness of the innovation processes in the Netherlands. We are good at developing knowledge, but not as good at *applying* this knowledge, that is translating the knowledge into products and services that people will use. There is a gap between researchers and developers<sup>1</sup> on the one hand and end users<sup>2</sup> on the other hand. We can bridge this gap if researchers and developers work together with end users. For some years I have been trying to put this concept into practice in market research and product development projects in the ICT sector, at present in my role as researcher and consultant for TNO Information and Communication Technology.

To me, *open* innovation is a process in which researchers and developers are *open* to end users and the way in which these users experience their world. I would like to invite you to look at innovation in a different way, because 'being open to end users' is not a secondary issue; it requires a totally different way of thinking about innovation.

### Innovation as a social process and a 'two-way street'

When people talk about innovation they often refer to technological or economical aspects – the creation of new products, services or processes, the use of advanced technologies, profits, cost savings, turnover or market share. Needless to say, technology and economics play an important role. However, I want to focus on innovation as a *social* process. Viewed from this angle, innovation is a process whereby people communicate and work with each other - or *fail* to communicate and therefore work against each other - in the development and application of innovations. What we are talking about is product developer Marjan who wants to develop a new service for UMTS and talks about it with Kamal, a possible end user, and how together they draw up an outline of the service. Or researcher Jaap, who wants to structure a process in a different way and discusses this with Ineke, who

uses the process in her work, in order to discover together exactly what happens in the process.

I sometimes discuss such market research for the purpose of market development with clients, and a typical reaction might be: 'End users can't express their needs. If you ask them whether they need UMTS, they have no idea.' I agree with this statement. I don't claim that all end users are capable of articulating their needs or of devising solutions themselves. What I *do* know is that, in many cases, researchers and developers could spend more time working together with end users and that they could learn a lot from doing so. We recently organised a workshop for marketeers and developers, in order to help them with their innovation process. We had also invited Patrick, someone you would call a "forefront end user", someone who tries out all kinds of new products and services. The marketeers and developers had the opportunity to ask Patrick any questions they wanted, and they thoroughly enjoyed this and learned from it. They had the opportunity to discover, together with Patrick, what new products and services there are and what innovations they themselves could come up with. 'We should do that more often, talking to an end user' was their evaluation of the workshop.

This example also makes it clear that innovation is not a one-way street. Researchers and developers don't sit in their ivory tower thinking of something and then market it. According to the social-constructionist approach<sup>3</sup> – which I subscribe to and which is consistent with my experiences – the innovation process consists of two parts, which tend to overlap: the development of an innovation and the adoption of an innovation. Innovation is a social process and a two-way street. Researchers and developers come up with innovations and are influenced by end users in the process. As soon as the innovation becomes available, people will either use it or not use it, often in a creative and unexpected manner. They give the innovation a place in their daily life and working environment. This then gives researchers and developers the opportunity to learn from this.

In the corridors the "text messaging example" is often a topic of discussion with remarks such as, 'Text messaging was not invented by market researchers', or 'Text messaging became a success without anyone being able to predict it'. I regard such statements as examples of viewing innovation as a one-way street. As if an invention can only be made by researchers or developers. As if you can predict an innovation from a one-sided perspective. A "two-way" interpretation of the same "text messaging example" would work as follows: text messaging was actually invented – by the end users, in this case. It was a technological option that users "discovered" and started to use. And if researchers or developers had been aware of peoples' tendency to write each other brief notes - colleagues who scribble each other a quick note, students who throw balled-up notes at each other in class - then perhaps they *would* have been able to foresee the success of text messaging.

### **Being open to end users - empathy and participation**

If we regard innovation as a social process and a two-way street, we have crossed the first threshold to *open* innovation. But there is another threshold: finding methods to allow researchers and developers to be open to end users. We would like to learn

about their requirements, but how do we go about it? After all, people do not have needs *per se*. The needs we are talking about here do not exist in an isolated or absolute sense, but in a certain context<sup>4</sup>. I have no absolute requirement for a mobile telephone. But because my train is delayed and I will be late for an appointment I have, in this context, I need to speak to someone and to do so I want to use a mobile telephone.

Let's have another look at the statement 'End users can't express their needs. If you ask them whether they need UMTS, they have no idea'. Of course it is difficult to give a meaningful answer to such a question. We would find out more if we asked indirect questions about the context of someone's everyday life and work, for instance: 'what does an average weekday look like for you? Tell us about your work. Do you encounter specific problems?' Of course we would then continue to ask about the subject we are interested in, for instance how the person communicates, and what information he needs to do so. Through such indirect questions we can learn about the context, about the methods people use and about problems or obstacles they experience<sup>5</sup>. In practice, this is an effective method to develop ideas for innovative telecommunication services.

A researcher or developer can try to put himself in an end user's shoes, ask open-ended questions and then observe and listen closely. Sometimes it is better not to ask questions, but simply to listen and observe how somebody lives or works. From the traditions of *participatory design* and *empathic design*, or *human-centred design*<sup>6</sup> we can learn how we can be more *open* to end users and how we can learn together with them. In this context we can see two possible movements. Researchers and developers can move in the direction of end users, for instance when they spend a day with them to find out about their daily work and to try to put themselves in their position ("empathic design"). Conversely, end users can move in the direction of researchers and developers, for instance when they participate in a workshop in which they look for ways to phrase a problem or find a solution ("participatory design").

In one particular innovation project<sup>7</sup> we tried to work together with police officers in this way, in order to develop innovative telecommunication methods. This has brought it home to us how difficult it is to be truly *open* to someone. Every project team member spent a day with a police officer. When we discussed our experiences afterwards it became clear that we had all focused on the same kinds of aspects, namely collaboration and the use of telecommunication methods. After all, this was the focus of our project. This raised certain questions: how much can you learn by following someone around for one day? What did we *fail* to see, as a result of our specific focus, or 'blinkers'? In the context of this project we also organised workshops together with police officers. In these workshops they could tell us about the problems they encounter in their work. They listed a range of subjects but we kept coming back to collaboration and telecommunication. However, according to them these areas were not where the main problems lie. How much of the end user's world do we allow room for? Must end users be allowed to change the focus of a project?

If, as a researcher or developer, I come down from my ivory tower and start working together with end users, how much empathy can or should or do I want to have, and

how much participation can or should or do I want to allow? I don't feel it would be constructive for researchers and developers to have 100% empathy because of the risk of "going native", whereby they would lose themselves in the other party and, for instance, start helping in areas where they could contribute little or nothing. Equally, I do not feel that 100% participation would be constructive, because that way the project could be 'hijacked' and that would do little justice to the expertise of the researchers and developers. What I *do* feel is necessary is learning why it is so difficult to be open to someone else and how much empathy or participation is constructive.

### **Open innovation as being open to "differentness"**

Why is it so difficult to be open to others? This question touches on the core of innovation. Innovation is about creating new products, services or processes for other people to use. Innovation is an attempt to create something new for someone. It's about exploring and creating "differentness" for a "different person". Let me digress for a moment, to two philosophers: Emmanuel Levinas and Jacques Derrida. They made "differentness" the focal point of their philosophies.

Levinas describes how difficult it is to see another person as "an other" and how attempts to *grasp* someone else often result in trying to *hold* that person in your *grip*. When I meet someone else I will classify everything I observe and hear in the context of what I already know. Therefore, it is difficult to let the other person be "different". I reduce the "other" to something I already know, something that already exists, to "the same". Levinas makes it clear that it is difficult to "think outside the box". In the practice of product development, researchers and developers often use themselves as examples when they think or talk about end users. Sometimes they do so consciously, but more often unconsciously. When they outline applications for their innovation these are often situations in which they imagine themselves<sup>8</sup>: 'Karel is a young man with a busy job as a product manager, he is stuck in a traffic jam on the way to an appointment and quickly wants to check how his shares are doing - so he grabs his mobile telephone, etc.'

If researchers and developers try to grasp an end user from the perspective of the product or service they are working on it is difficult for them to be open to this end user. I have seen a product manager become angry with a test subject during a *usability* study of "his product" because the person 'did not use his product properly'. He would learn a lot more from the study if he were able to be more open to the way the end user experiences the product and his environment. This might give him ideas for improvements to "his" product that he had not previously considered. This leads me to the recommendation that researchers and developers should not try so hard to grasp end users, but rather they should observe and listen to end users more openly. This allows room for surprises, for "differentness".

What researchers or developers learn from end users must be given a place in the innovation process. This is done, for instance, when they have discussions in project meetings or when they make decisions about characteristics of the product or service. In project meetings in which I participate I notice that we talk a lot about certain subjects (and not so much about other subjects) and that we use certain words frequently (and others infrequently). We often talk about end users in detached or general terms, for instance ‘the average Dutch citizen’ or ‘24% of the market’. It is not often that we talk about concrete end users, for instance: ‘I spoke to Jacqueline last week, one of our customers, and she told me this.’

Derrida suggests a method of *deconstruction* in order to carefully read texts and take note of what *is* and what *isn't* said. He wants to listen “between the lines” to what *isn't* being said, and create room for these marginalised texts. In this way, he wants to create room for “differentness”. This leads me to recommend that, in their meetings, researchers and developers should encourage each other more to talk about concrete end users – and less about themselves. For instance, they could talk about a 60-year-old woman who does not like computers. However, she does call her sister once or twice a week via video conferencing on her PC. Incidentally, she refers to this as ‘via MSN’. This is a woman I recently spoke to in the course of a study. I somehow think she does not figure in the discussions of researchers and developers who are currently working on video conferencing (more likely these discussions feature highly educated, young people).

In this context Jane Fulton Suri <sup>9</sup>, a researcher and developer of innovative products and services, says: ‘On the one hand, many design problems arise when we assume that everyone else is just like us’ – when I distil the “differentness” of an end user down to myself. ‘On the other hand, many problems arise when we think of other people as so different from ourselves that we think of them as “them” ‘ – when I talk about someone in a detached manner and do not see his or her “differentness”.

### **Policy development for *open* innovation**

I have been advocating *open* innovation, an innovation process in which researchers and developers are open to end users. I could mount a similar argument about researchers or developers who are more open to others with whom they work and who have a different background, expertise or other interests than they do. In this context we could consider multi-disciplinary teams in which people with technical, managerial or marketing expertise work together, or collaborations between people from different organisations, from knowledge-producing or public organisations or from supplying or procuring companies. The issue is always being open to others, learning from each other and exploring and creating “differentness”.

How can we give the above ideas for open innovation a place in policy development? By paying specific attention to the following points when formulating or evaluating a policy or project:

- Is the innovation process conceived and structured as a social process, as a two-way street, whereby researchers and developers try to be open to end users and work with them constructively?

- Have measures been taken to get to know end users and their present everyday life and work? Is there room for “differentness”, for slowly getting to know their needs (as opposed to quickly grasping)?
- Have measures been taken for constructive collaboration between researchers or designers and end users? Is there room for “differentness” during workshops, discussions and decision-making processes; room for progressive understanding?

Open innovation would become totally *open* if policymakers and executors of innovation projects would learn from each other, for instance by sharing *best practices* in respect of the above points. In this way we can be *open* to each other in the way we learn from innovation and formulate policies.

2539 words

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<sup>1</sup> I use the words ‘researchers and developers’ in a broad sense, referring, amongst others, to people who conduct fundamental or applied research and people who develop or design products, services or processes.

<sup>2</sup> When a product or service is still in the developmental phase, there is no product or service yet, and therefore no end user. At best there is an *intended*, *assumed* or *potential* end user. However, for the sake of readability I will continue to use the word *end user*.

<sup>3</sup> To find out more about this view of innovation, and the relationships between people and technology in more general terms, see, for instance, Nelly Oudshoorn & Trevor Pinch (Ed.): *How users matter – The co-construction of users and technology* (MIT Press, 2003).

<sup>4</sup> There are also more fundamental requirements that are more or less separate from the context, such as the need for food and drink, shelter and social security. In this essay I want to look at less fundamental requirements, such as the need for communication.

<sup>5</sup> One example of this method is *contextual design*: we study the context of people’s daily life and work and use it as a basis for the development of a product or service. See: Beyer & Holzblatt: *Contextual Design* (Morgan Kaufmann, 1997).

<sup>6</sup> See, for instance: Douglas Schuler & Aki Namioka (Ed.): *Participatory design* (Lawrence Erlbaum, 1993); Ilpo Koskinen, Katja Battarbee & Tuuli Mattelmäki: *Empathic Design* (IT Press, 2003) and ISO 13407 *Human-Centred Design Processes for Interactive Systems*, (ISO/IEC 1999).

<sup>7</sup> Freeband FRUX is a research project in which different organisations (knowledge institutes, companies and end user organisations) work together on the development and evaluation of innovative telecommunication services. See: <http://www.freeband.nl/project.cfm?id=528>

<sup>8</sup> I refer to the practice of researchers and developers to formulate “storylines”, “use cases” or “scenarios” in which end users use the proposed innovation. They formulate such storylines, use cases or scenarios to explain the innovation to themselves and others.

<sup>9</sup> See: Jane Fulton Suri: *Empathic design: informed and inspired by other people’s experience*. In I. Koskinen, K. Battarbee, & T. Mattelmäki (Eds.): *Empathic Design* (pages 51-57) (Edita Publishing 2003) Jane Fulton Suri works for design consultancy IDEO.