

## «Swimming against the tide»

Interview with Wilfried Beck, the inventor of digitalSTROM®

He lives in a world full of visions, yet has both feet firmly on the ground. He is behind countless developments and patents for the automation of industrial equipment. In 2001, following the sale of his company, the Apple fan and his family moved to the United States. It is here that he hit upon the idea of developing intelligent electricity.

### **How did you get into domestic engineering?**

When I came back from America four years ago, one of the things I brought back with me was the realisation that the technologies in our houses would continue to develop further, but that humans aren't getting any better at operating concepts and that, at some point, we will be out of our depth with it. The question then was: what kind of product do we need to enable us to live alongside technology in the future? I had seen in American cars with this little call button which closed the gap in my train of thought. This is what gave me the idea for ipConcierge.

### **What does that mean?**

Today, we have so-called IP telephony or IPTV, i.e. you can telephone and watch television via the Internet. ipConcierge is a service which is called up via a call centre. If, for example, there is a problem with the heating, I go into the cellar and press a red button which immediately connects me to the ipConcierge. The same way, I would have a button on the video recorder which I could press if the programming didn't work. This was a really fascinating idea.

### **Or rather, a vision of utopia?**

I enjoy developing utopian ideas. At the moment, I live in a world of my own, and simply allow myself to say «If only it were like that...»

### **Do you expect these ideas to be realisable, or are you restricting them?**

Not really. We have, after all, already installed the ipConcierge and demonstrated it – here, in my home. The problem wasn't with the technology, but rather with the question: «Are customers prepared to spend money on it?»

### **So this was the great vision.**

Yes: that is the reason why the company was established. Then however, we were faced with the major problem that an old person perhaps has the call button but that the call centre cannot do anything, since it doesn't have any influence on the equipment. I looked at all the existing systems, and didn't really find anything that was suitable for general use. You need to build a new house in order to install a bus system. One option would be radio, but users find this neither acceptable nor safe. And so my search was orientated towards something which, integrated in the equipment, was simply sold along with the system right from the start – and came up with digitalSTROM.

### **How should one imagine this technology?**

In future, I buy a light which is "digitalSTROM-capable". It doesn't cost any more than a standard light. When I come home, I plug this light into a normal socket. Now I can automatically turn it on or off "softly". You hardly notice it, since it happens within a

second, but my eye isn't "flashed" as it were, especially at night. The bulb also lasts longer. The digitalSTROM chip integrated into the light is responsible for this dimmer function. Now, if I have a socket from which digitalSTROM comes (this needs an equally-large module known as the digitalSTROM meter to be built behind the circuit breakers), this digitalSTROM light fits into the system, and I can programme it via the switch and, combining it with other light sources, can create various atmospheres. I can even measure the electricity consumption.

### **It doesn't just control lights though does it?**

We have a colour code developed by the ETH Zurich and which divides the entire room. The colour yellow is light, grey is shade, blue is atmosphere, light blue is music, purple is video, red is alarm, green is access, white stands for the kitchen equipment and black is a wild card. I now give the room orders via a colour switch. The main intelligence is in the equipment. A light, for example, can remember 190 different things. The manufacturer doesn't just programme the light to come on at the "light" command, but also at the "alarm" command, enabling light in the room. Or the light flashes when there is somebody at the door. When music is commanded, only the music-making equipment responds. This is stored on the chip. Why, for example, shouldn't the radio in the kitchen go quiet or go "ding dong" when there is somebody at the door? All this can be programmed.

### **So, the equipment is intelligent.**

Precisely. An endless amount of various chips with different software and different operating functions can be manufactured. Also conceivable is a switch built into a microphone. This enables it to react to sounds and it hears whether there is somebody in the room. If the said person leaves the room, the light goes off after ten minutes.

### **When will this switch be marketable?**

If digitalSTROM is ready for series production in 2009, this switch will follow a year later.

### **And where will we be in 2015?**

(laughingly) Using the ipConcierge. No - that'll probably take longer.

### **Your house serves as a test object.**

Yes - following my return from America, I consciously bought an old house in Wiesbaden and did it up - as 90% of consumers do. It was very easy. We built the digitalSTROM meter into the circuit breaker, equipped all rooms with new switches, and installed chips in the equipment.

### **How can you save energy with digitalSTROM?**

Now we are getting philosophical! I would never have had to discuss saving energy with my grandmother - it was simply in her blood. She knew that you only put the light on when you wanted to read, and turned it off when it was time to go to bed. And instead of putting the heating on, she put a cardigan on when it was cold. However, since we are a generation who wants comfort these days, digitalSTROM can do a great deal in this respect. Our focus is not on saving energy - it is the prevention of energy waste. We wish to selectively use energy there where it is needed. It is very easy with this thought in mind: when you want to go out of the house, you simply say "I am going". The flat then

realises, "I see, he has gone out now" and turns off all the consumers he has forgotten about.

### **And what about the aquarium pump?**

Of course, that stays on, since the products are told how they are to behave. For example, the smoke alarm can tell the room, "There's a fire!" and the shutters say, "I am going up" since the electricity could have cut out in a couple of minutes, and this at least enables you to get to the emergency exit door. That is the appealing thing about digitalSTROM: it describes conditions to the room, and the products react.

### **What influence do the manufacturers of electrical equipment have on their function?**

To this end, we have established digitalSTROM.org, where the members determine how their digitalSTROM product behaves. We cannot control the requirements of the various areas such as light, shade or ambience, which is why we require external expertise. For the first 18 months, a major promoter will be doing this work on his own. It is his market leadership which will decide whether it is accepted. We are trying to get the very best: applications must be made on digitalSTROM.org.

### **Later on, each manufacturer will be able to individually programme each product?**

Yes, but he is obliged to explain this in the instructions. For example, the hair-dryer manufacturer must say: "When somebody rings the doorbell, the hair-dryer will go off briefly". Each manufacturer can "teach" his products to do certain things. Such as the panic function operated from a separate button next to the bed and which turns on all programmed lights within a matter of seconds.

### **Right: now I have got to grips with this simple system. How do I get it onto the PC?**

If I am on holiday and want to say, "Heat the house up!" or "Is there anyone in the flat?", I need a web server. This web server is so small that it fits into the circuit breaker. Hence, all that is needed is one additional module which is connected on the one side to the electricity meter and, on the other side, to the Internet. Now I can use the technology via laptop or mobile phone. Or even via ipConcierge.

### **You are very persistent.**

My brother once said, "Why do you always have to swim against the tide?"

### **digitalSTROM is only a means to an end, then?**

Essentially, yes. Necessity is the mother of invention.

### **What kind of person is the inventor Wilfried Beck?**

If you want people to like what you are doing, you need to be aware of inventing things which are both useful and practical. I would like people to appreciate a product and to say: "That is a great product". I do it out of self-interest. It is something else to say, "I want to make a lot of money with it". However, since some ideas can only be launched onto the market if you make money with them, it makes for a very interesting combination.

### **You also started off in a small way, didn't you?**

At eight, I took all the alarm clocks in the house apart, at 13 I built my first product – a door lock with code number for my mother – and at 16 two friends and I had a company

for lighting systems. This is when I understood and learnt the term "entrepreneur": if you want to do something, you have to get on and do it.

### **And you did!**

Following my apprenticeship as an information electronics engineer, I started working in a self-employed capacity with a computer service at the age of 21. Beck IPC was established in 1992 as an exclusively development company. We presented a world novelty at the 1993 CeBit in Hanover: the smallest industrial computer that can be assembled on DIN rails. And this is how Festo became our partner. In a matter of eight years, our staff grew from 6 to 85. At the same time, I managed the product management of industrial computers – later on the innovation management of electronics at Festo. After eight years, I wanted to do something new, and left the company in 2001.

### **And you went to America.**

Before I went to America, Beck IPC developed the small web server which has already been sold over 500,000 times. I was already thinking of building automation at that time.

### **With a sure feeling for lifestyle trends.**

Naturally – after all, I come from a fashion house. Cooperation with Prof. Ludger Hovestadt from the ETH Zurich is also essential for the development of digitalSTROM. His is a background of very complex systems. He doesn't talk about one light – rather, about light which comes from various different light sources. And architecture also attaches importance to aesthetics, to the surface of products such as our switch, which works with colours instead of words. All I wanted to do was to build a simple technology into a light.

### **You are playing it down now...**

OK... in reality, digitalSTROM isn't simple. There is a highly-complex thought pattern behind it.

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