Smarter Cities with IBM Software Solutions

Software Group

The interview partners Norbert Ender, Leader of Smarter Cities in Switzerland and Austria, and Stephan Schneider, Executive Briefing Consultant Smarter Cities at the IBM Research Lab in Rüschlikon, introduce themselves.

Norbert Ender: „Smarter Cities is an IBM program lasting several years with the aim of developing innovative solutions for our cities. It is my job to manage this program for IBM Switzerland and Austria."

Stephan Schneider: „As you know, I work at the IBM Research Lab in the Industry Solution Life sector. It is here that our customers meet our researchers and discuss current subjects, research projects, strategies and operational topics. In the Industry Solutions Life sector, I am responsible for the productive industries, and thereby for our customers in this field as well as for activities relating to Smarter Cities, which I coordinate. We have organized workshops on this topic and carried them out together with the client."

World population is continuing to grow rapidly. 70% of the population of Switzerland and Austria live in cities. This development will result in an even greater challenge for the infrastructure.

Stephan Schneider: „Infrastructures have basically not changed over the past 10 years, but the demand on resources has increased significantly and the resultant challenges vary greatly, depending on where in the world we are situated. Asia is primarily confronted with growth and is fighting to provide the necessary infrastructures fast enough to cope with this. In Europe and the USA the focus is more on retaining quality of life and habitat. Here the need is to create the necessary infrastructures in particular with respect to the compact living conditions."

Norbert Ender: „Here in Europe, the challenges are primarily located in three areas: the first concerns energy efficiency and the sustainable handling of resources. Many cities have set themselves the clear target of promoting the use of renewable energy and at the same time becoming more energy efficient. Zurich and other Swiss cities are setting their sights on the 2000 watt barrier – a third of current consumption, whilst retaining the level of prosperity. This is the paramount aim of our cities, one which poses a formidable challenge.

The second area is mobility. Over the past ten years, congestion time in Switzerland has increased by 75%. If we want to prevent a future transport collapse, we need completely different solutions; solutions which if necessary lead to a relocation of mobility. This does not mean that no cars can travel, but rather that there are more intelligent solutions available and that communication is possible without physically meeting.

The third topic is the health of the population. Health policy has the task of guaranteeing the health of an increasing number of people with less capital. It is well-known that the direction of current demographic development is that more and more people are becoming old and old people are living longer. Our third central task is to finance this trend."

What the city of the future has to offer its residents.

Stephan Schneider: „Tomorrow's city is networked. The most varied of sectors communicate with each other, interact and exchange information. Transport, water, waste disposal, health care and public authority services are all on the same network. Communication crosses borders. In the future, we will be confronted by a „system of systems", which is currently being set up. The benefit sought lies primarily in better quality

of life for the inhabitants, the citizens of this city. But this increase in living quality must be obtained with a concurrent reduction in environmental pollution."

The contribution of IBM software solutions to the creation of Smarter Cities.

Norbert Ender: „IBM offers numerous solutions for a Smarter Planet and Smarter Cities, in order to achieve the targets aspired to. One example is the processing of information. The linking of systems is increasingly a central theme. The information fed in via sensors, information about the flow of traffic, about energy consumption and other matters must be collected, integrated and interpreted. With Cognos and InfoSphere software, IBM possesses effective solutions for tackling these challenges. Another example is the Maximo solution for the comprehensive management of all of a city's assets and for the set up of an information system that allows city management to have an overview of the city's energy consumption and detect potential areas for energy efficiency optimization. These are just a few examples of IBM software solutions for Smarter Cities."

Examples of implemented projects.

Norbert Ender: „We have already realized hundreds of projects around the world. The current edition of Think magazine is devoted to the topic of Smarter Cities. We have presented concrete projects that we have implemented in Europe, including energy efficiency plans in Switzerland. Together with our partners BKW FMB Energie AG and the Swiss Post, we have executed a pilot project in Ittigen near Bern and installed a Smartgrid there. We installed intelligent counters in the households, which show how much electricity they have used and when. In this way, they can optimize their energy consumption. Furthermore, we have carried out a pilot trial of electromobility to investigate the effects of electric cars on, amongst other things, the power supply system. The aim is to gain new insights so that such Smartgrid projects can be productively introduced in the coming years."

Research drives the implementation of the Smarter Cities vision.

Stephan Schneider: „A multitude of projects are pending in research, not just with regard to Switzerland and Austria, but rather dealing with fundamental and global problems that need to be resolved. One example is the modelling of such complex systems - such „systems of systems", as we call them. We also need to ask ourselves how the data should be exchanged between the various infrastructure environments – that is between health care and the transport sector or energy management. How should we communicate and which standards do we need to be able to ensure the exchange of information? The catchphrase here is the City Geography Markup Language, an application procedure for exchanging information between systems. We are working together with universities to build up networks to bring in support and additional expertise. For example, we are working together with the Department of Architecture at the ETH in the areas of city planning, IT and Smarter Cities. The aim is to define the effects on city planning related to these developments. In this way, all the involved parties are pulling together and moving in the same direction."