

Interconnected IT for business models in rural areas

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More and more people are moving from rural areas to cities, leaving behind crumbling infrastructures that make daily life difficult for those who stay. Some people are bucking this trend. Now they get support from researchers: At CeBIT, they will show how they plan to create new business models in rural areas with the help of interconnected IT.

A lone bale of hay tumbles across a dry and dusty road. Somewhere a wooden door creaks in its rusty hinges. Not a soul in sight as far as the eye can see. A familiar scenario from old Western movies. But today, many German towns and villages also appear to be almost abandoned. Just this summer, the headline of a major German daily newspaper read: "Young people heading for big cities in droves." And with the people goes the infrastructure. No baker to bake fresh bread, no bus waiting at the bus stop, no doctor to take care of you when you are sick. At the same time, people living in cities, in particular, dream of living in the countryside: they long for nature, animals, wide open spaces, fresh air. And to be far away from the stress, noise, and hectic of the big city. But, unfortunately, this also means being far away from everything else.

People living in [rural areas](#) are developing concepts to counteract the crumbling infrastructure: There are public transport busses that also deliver packages, school busses that do not drop the school children off at a bus stop, but rather right in front of their homes, etc. etc. In less densely populated areas, necessity is the mother of invention. "The potential is still far from exhausted though. We can use the existing initiatives that are aimed at preserving rural infrastructures in even

smarter ways: by interconnecting them via modern communication technologies," says Dr. Mario Trapp from the Fraunhofer Institute for Experimental Software Engineering IESE in Kaiserslautern, citing an example: "Were it not for the [school children](#), public bus services would have disappeared in some regions. In other areas, car sharing is offered. If all stakeholders knew about each other, modern IT could help to optimize the transportation system of an entire region."

New platform "Smart Rural Areas" to be presented at CeBIT

In order to make this vision a reality, IESE is developing a platform that interconnects various IT systems – such as the bus system with the package delivery logistics. The system provides the interfaces needed by the different insular solutions to communicate with each other securely and in real time. This technology is the basis of the Living Lab "Smart Rural Areas", which the researchers will present at CeBIT in Hanover from 16 to 20 March (Hall 9, Booth E40). Here people can test their business models for rural areas with the help of a real-life simulation – without having to repeatedly reprogram the application for their particular purposes. To date, this is being done with previously elicited data. Starting from next year, information collected in pilot projects in the region will also be used.

"It is not a trivial endeavor to make individual IT systems work together. In addition, there are special challenges regarding IT networks in rural areas," says Trapp. In contrast to cities, data cannot flow without interruption from sensors to the Cloud. The problem is that the different worlds of IT systems are based on different software protocols, IT infrastructures, computer languages, development phases, simulators, etc. The various components of rural networks are widely distributed and must also function when they are cut off from the network – for

example, if there are problems with the wireless network or with the broadband.

Initially, simulations for model regions in the state of Rhineland-Palatinate will be developed in the Living Lab. The state government provides support for the project. In the spring, a new research lab will take up work on these issues at IESE in Kaiserslautern. "Many companies recognize the potential of the new IT world in rural areas, but are afraid of the high investments involved. In the Living Lab they can test their ideas first. This is also interesting for small and medium-sized enterprises or start-ups. The focus of our research is always on the people. At the same time, however, we must realize that technology is the crucial factor for giving rural areas a perspective for the future. Our goal is to bring together those people who are working on making rural life in the future a viable reality and to offer them a development and testing platform for innovative ideas," states Trapp.

"With the Living Lab, we have taken a first step towards smart life in the country. Of course, this is just the beginning. But we are already trying now to implement whatever is possible," says Trapp. For example with the help of smartphones, which are virtually ubiquitous today. The scientists want to use them to organize a package service at gas stations. "Most of them are located along the main traffic routes taken by commuters and are thus also easy to reach for people living in more remote areas," adds Trapp. This approach is a win-win situation for everyone involved: for the recipients, who can conveniently pick up their packages on their way home from work – the information is sent to their smartphones; for the package delivery industry, which saves costs for the expensive last mile to the recipient; and for the gas station, which earns money from the additional service it offers.

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