

e-moving

by Interroll



BUILDINGMINDS



A digital twin for building management

The Swiss Schindler Group has teamed with Microsoft to found BuildingMinds. The startup delivers real-time information for building management with the help of Schindler's extensive domain competence and Microsoft's powerful cloud services. Jens Mueller, Chief Operating Officer and Managing Director of BuildingMinds, talks about the partnership and business focus.

Various digitalization concepts have emerged over the years to manage energy, lighting and climate operations in buildings. How would you describe BuildingMinds' holistic approach, which records, monitors, controls and documents all technical areas of a building?

Our goal is to view architecture in such a way that we can incorporate technology that supports us. One of our tasks is to introduce digitalization in buildings still operating in an analog mode. Such a building today might have a 2D plan with the data twin tucked away in a filing cabinet. It's impossible to sensibly manage a building or building portfolio in this way.

Comprehensive networking is a revolution in the construction industry, given that the various trades and phases of construction were strictly separated in the past.

If you speak to major portfolio owners around the world today, they'll tell you this is a major issue. However, 90 percent of our business will be with existing buildings. New buildings are constructed according to current standards. With existing buildings, it's a different story: 40 percent of office buildings are currently underutilized. Space is effectively being wasted. And another 25 percent is expected to be added in the next five years, resulting in an enormous amount of space worldwide. Shared office concepts are changing this situation, but obviously we want to ensure that people can work more effectively in the future, and this is possible because a lot more data is available.

Doesn't that create unprecedented transparency for owners and asset managers?

We need to ensure that IoT (Internet of Things) data is matched with a business process logic. This match today is rudimentary at best. There are a number of "islands" that collect data, but what we need is a digital hub in the business logic that can provide portfolio managers with consolidated statements. Thanks to our closed-loop process and digital building twin, they can receive information in real time and predict where something threatens to fail. In the future, it will even be possible to predict the portfolio value to some extent. That is one of our top goals, which applies to the technology in the building and the entire contract logic. Often insurance providers can't tell what is insured by the owner, the facility manager or the tenant, and whether there are duplicates or deficits. If you can provide transparency, you have an important potential partner. We will see correlations that will open up entirely new business models.

We are currently working on digitalization projects, in which we take the 2D plan, scan, process and run it through an algorithm, and then localize it accordingly. I think a drone will do this job in five years. Or the facilities manager will walk through the building wearing HoloLens glasses.

Why the collaboration between Schindler and Microsoft?

One thing we bring together in this partnership is our domain expertise, which we certainly have from Schindler. Once you have the skeleton of a new skyscraper, one of the first things you install are the elevators. We know which standards and which legal regulations apply at the location as well as what the access to customers is like. Microsoft, on the other hand, has a preliminary product that doesn't need to be developed again. We use this as basis to define our data model, partly for reasons of speed. The issue is how quickly we can scale up into all corners of the world when the first pilot projects are being launched. This isn't possible if you have to do everything from scratch.

What about manufacturing plants?

Space always differs according to the user profile. Office space is managed differently from living space or production space. We are also working on projects in the corporate real estate market with mixed use in a portfolio asset. We're concentrating on office space first, although we map everything digitally. We have a digital twin for every building, and probably half of the utilization characteristics also apply to production spaces.

Are you active in Big Data?

Anomaly detection will be a major focus for us in the future. There are entire chains of causation. If something stands out here, it indicates a problem. Algorithms can also approach the data with fewer preconceptions than humans. The nice thing about algorithms is that they can be replicated in no time. If we find anomalies in one building today, we can quickly transfer them to the next one. We'll discover tasks that we don't even know we need today, and we'll develop solutions for them together with our customers.



