From "Tech Miracle" to Evolutionary Change

Michael Cesarz

Interviewee

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Prof. Michael Cesarz, CEO of thyssenkrupp Elevator MULTI, is an architect with an extensive experience in cutting-edge development. He has been in charge as a CEO for internationally operating corporates before, and is a leading expert on sustainability and smart technology in the real-estate industry. Prior to 2018, he was the Executive Director of International Operations at OVG Real Estate, and has held CEO positions at Majid Al Futtaim, Dubai and Metro Properties, Dusseldorf. He was a partner at Behrendt Tamm & Partner Holding from 1991 to 1999. He graduated with a Dipl.-Ing. in Architecture from RWTH Aachen University in 1989.

The potential of ropeless elevators to change the way we experience urban space has been addressed by two research projects conducted by CTBUH and funded by thyssenkrupp. Michael Cesarz, the CEO of thyssenkrupp's MULTI ropeless-elevator product, recently spoke at the 10th CTBUH World Congress in Chicago. He sat down with CTBUH Editor-in-Chief Daniel Safarik to discuss the trials and tribulations of marketing a product that diverges significantly from the prevailing mindset of manufacturers, consultants, and developers alike.

I was interested to learn that thyssenkrupp Elevator (TKE) hired an architect to be the CEO of its MULTI effort. What do you think that experience brings to the table?

It was a mutual feeling. TKE was very keen to get an architect on board, and I was already a big fan of MULTI (see Figure 1). I was the one signing the first letter of intent (LOI) on the East Side Tower, Berlin project, on behalf of OVG Real Estate (to be the first MULTI customer). But the design changed massively, and it no longer made sense for this to be the first use case. So, we disengaged, and then I was on the other side of the table.

As we came up with the next project, we came to realize, "architects are best at talking to architects." Even in my previous positions as a CEO of development companies, I had probably come to know 60 or 70 of the world's top 100 architects, personally. And that gave me a little bit of a head start when I came to work for TKE. They realized that the old-school elevator salesforce, with the brochure under their arms, going to an architect, doesn't make sense anymore. I was throwing those guys out of my office, because I didn't want to know what the machine was; I wanted to know what it could do for my building.

So, if the normal design and construction process has 10 phases, an elevator company will usually come in roughly at phase six or seven. With my experience and connections, I can come it at phase one or two. It's not that I am trying to avoid the tendering process. We will still have to meet the market price, but we can collaborate from the start with the architects and design in a productive way.

Figure 1. MULTI is a ropeless, multi-directional elevator system that could change the nature of how tall buildings are connected. © thyssenkrupp Elevator

How have your interactions with architects been since taking on this role?

I'll give you an example. I met with Helmut Jahn last year at the 2018 CTBUH Tall + Urban Innovation Conference. I've known him for, I don't know, decades. We were sitting in his office and he jumped off his chair and said: "You know what, I have never designed a core." I said, "What do you mean, you never designed a core?" He said: "Yeah, well, it's boring. I mean, it's determined by the authorities, given the size of the staircase, and by you guys when you design the elevator. So, what is left for me but flooring and lighting? Boring!"

The thinking of an architect is not to design the building around an elevator shaft, nor

should it be. I might think MULTI serves the project in a better way than other elevators, but that's not why you make a building. So, I could see this would be an interesting challenge. On the one hand, I have to be entrepreneurial, but on the other, I have one foot in the corporate world with a strong brand. This approach led to Jahn and Werner Sobek working on the TKE Test Tower in Rottweil (Germany)—it was a big party.

> "When I took the job, I said, 'Give me those people you think you can't discipline; who are just crazy, who don't respect hierarchy—I need those people.'"

I understand that TKE was close to canceling the MULTI project a few years ago. What changed?

There was a concern that the project would be an isolated "technology miracle" without any outcome for the conventional elevator business. So, we placed the project in the Research and Innovation Center at Rottweil and sought to ensure there would be spin-off technology for the conventional business. We worked back to roped technology, thinking, maybe the next step forward should be advanced braking control, or maybe the TWIN (two-car, one-shaft system) could run "on steroids" with linear induction motors, which would allow us to avoid the whole machine-room issue. For instance, we would then have no limitations to height anymore for the TWIN, which are large cabins, and currently limited to about 270 meters per cabin.

We decided we would pursue it alongside innovations in conventional elevators, because people are very skeptical about the concept of no ropes. Change is painful. The engineers and technicians in the field would have to learn new skills. It was in some ways a "mission to Mars," and a very heavy discussion about whether we should do something else. But we have great leadership on the project now, and we also brought in someone from the automotive industry. The big change from our normal process that would allow us to take the risk is that we are not producing a thing—not a screw.

Manufacturing is outsourced?

It is completely outsourced. It's a supply chain—which is also something this company was not used to. It was one of my preconditions when I started. Before I signed, I said, "I will not produce it! I don't want to have any production in my portfolio. I am not measuring my quality by the number of heads I am employing. I need a flexible "speedboat." That's the only way an individual product can survive in this market.

How would one go about finding people to produce something that hasn't been made before?

We created a purchasing department, but we structured it in a different way. I'm not looking for companies I can squeeze. I could never have the best people for specific problems in my company unless I specialize in those issues. So, when it comes to the powertrain for example, there's a company that does nothing but that. Why would I think that I could hire powertrain people and do better than that? They're always working on the next version, because that's what they do, and they need to stay on top of the market to survive. And you can say the same thing for doors, optical sensors, and all the other parts. We have wonderful brake experts here, but are they better than specialized companies in the market? I don't know. I would like to question it.

It seems almost like you're approaching this as an architect with a good specifier on staff—orchestrating, but not necessarily getting down to the details, just developing the confidence that the individual parts are being supplied by people at the top of their game, which requires a lot of research up-front, but it smooths the path later.

Yeah, and I think the job description of successful and modern architects has changed massively. Still 50 to 60 percent of the job is being creative and designing. But the rest is networking, and knowing who does everything best. This is what people like Bjarke Ingels do in a fantastic way. His network is outstanding. And it includes the developers. He can easily get people on his side, because he's such a personality. And being a personality is meeting people at the end of the day.

So, what was next for building the team and the product?

The next thing I did was ask for a list of all the people they wanted to fire. They said, "you're crazy!" But I submitted that these people are capable of something, or they would not have been at the company for so many years. I said, "give me those people you think you can't discipline; who are just crazy, who don't respect hierarchy—I need those people." And they did! I felt at first like I had a bunch of orphans. But after two or three months, they learned they could act freely, that I would listen to them, and would respect their expertise. Of course, you cannot lead such a team in a hierarchical way. You have to prove yourself every singe day. Your business card means nothing. I've done this for a living for a long time, and for me it is so fun; but I realize for some it would just be a nightmare.

How has this decision gone over?

It was very much against the established corporate culture, but it is working. I put a young lady in charge of sustainability, and there was a lot of shouting that she was too young. But she was burning for this stuff. There is no point talking about sustainability after we have already designed the machine. I need her to really push the engineers and get them to take sustainability seriously. There are so many characters like that in the office now—it's a good thing.

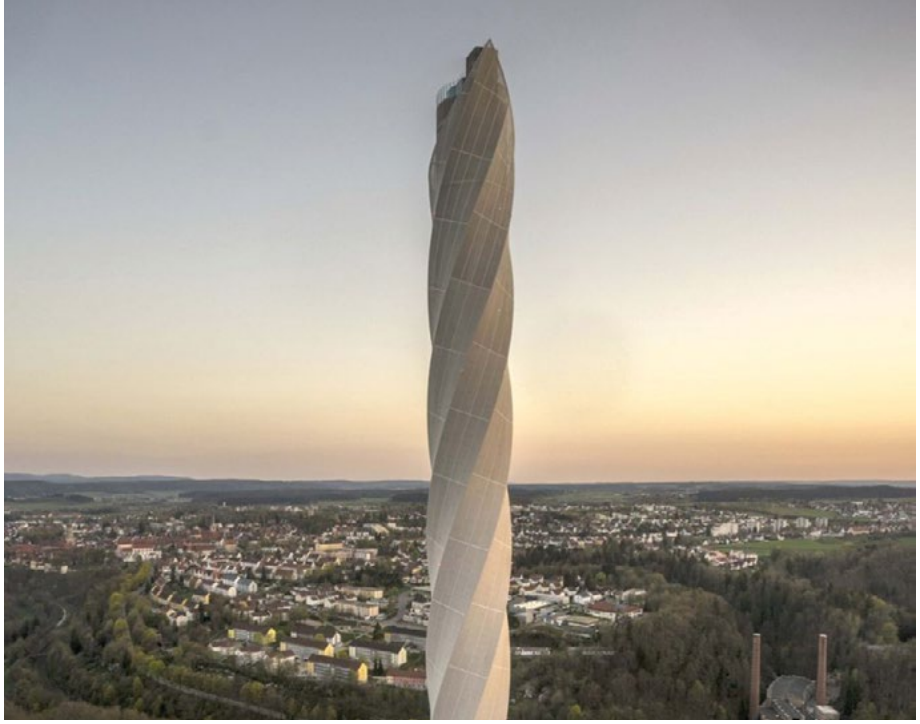

Figure 2. The Aufzugstestturm in Rottweil, Germany is a test location for new elevator designs.
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How does having the corporate offices in Essen and other parts of the team elsewhere affect operations?
Sales, administration, purchasing, sustainability and the controller are in Essen. We need those people to have a lot of interaction with the rest of the conglomerate. We have a group of engineers in Filderstadt, near the Stuttgardt airport, who are really focused on the machine itself. Of course, we created a lot of touchpoints so they are not in some kind of vault. Rottweil, then, is the R&D center and testing facility (see Figure 2).

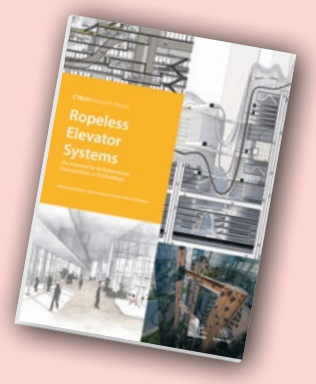
Why was a remote place like Rottweil chosen for a 246-meter elevator test tower?
Well, we tried to get a location closer to our headquarters, but there are hundreds of kilometers of unregistered coal shafts in the Ruhr Valley. This is a heavy building and it was hard to find a place we could sink its foundation. Also, the Dusseldorf airport is close by, so they were insisting we could not go over 200 meters. Then we looked closer to the engineering team in Stuttgart, but being close to the airport there, we had the same problem. When we came to Rottweil, the local politicians really embraced us, seeing an opportunity to boost tourism for one of the oldest cities in Germany. Ironically, it had already been called "The City of Towers," but this was in reference to churches.

And it's been good for the economy and for your own marketing?
Since opening two years ago, we have had 400,000 people visiting. At first we were overwhelmed! It's an industrial facility; we had not considered it would be a tourist site. We didn't have enough toilets or shelter. But now the city is building a bridge from the village, there are new hotels, and the observation deck is doing well. And it's a beautiful area, and this is a whole new way of seeing it.

Back to fundamentals for a moment: How big do you think the market is for MULTI?
Of course, we have a business case. I can't talk too much about numbers, but the principle is that this is not a mass product. It is a machine for special uses and places. In a regular building based on sheer economics with no design in it—this won't be cost-effective. We want to be in special buildings that have a vision, that are technology-driven. It doesn't make sense if the elevator is the only "smart" thing in the building. This industry is so conservative, think about it. We still use words like "landlord." So, the changes we will see are evolutionary.

So, how to convince people to take even small, evolutionary steps?
The building is real estate; it's standing there "forever." So, you better make sure that your building is prepared to take evolutionary change into account. I think it's difficult, because the regulators are not so close to the technology, to be very polite. Even the architects are often not very technical. I think once we see more of the digital wizards we are producing today, becoming fundamental to the teams of developers, architects and government—then "smart" will work on a bigger scale. Right now, the only way we can convince developers to go to new technology is when we give them a clear advantage, by saving space and making more efficient operations. And the first step is convincing them to stop brutally oversizing their buildings in the first place. Everything is set up for 100 percent occupation, round the clock, all year, when that's not the real scenario. Regulation also forces us to do this, to some degree.

You're playing a long game, then.
The megatrends are with us—we'll have 2.5 billion more people by 2050. This will drive up the cost of land in big cities. We will have to get taller and more dense, and if there are more ways to do that, why not develop them now? I think there's a lot of resistance, and an inclination to do the same as we did before, forever. But there will be a certain point in time where it just breaks. ■



Editor's Note:
The CTBUH Research Report ***Ropeless Elevator Systems*** *is available at the CTBUH Web Shop at store.ctbuh.org*

The CTBUH Technical Guide ***Skybridges: Bringing the Horizontal into the Vertical Realm,*** *will be released in mid-2020.*