

TRANSKRIPT PODCAST SIEMENSSTADT CALLING #11

- INSIGHTS INTO THE CITY OF THE FUTURE -

Sarah Tietze

Hello from Berlin and welcome to Siemensstadt Calling, the future podcast. In Siemensstadt Square, a whole new urban quarter is being created and with it a million square meters of Berlin's future. I'm Sarah Tietze, and in our podcast I get to talk to a lot of exciting personalities about our lives, living space, work and research in the future, and what influence this will have on our cities in the future. Stefan Kögl is always part of our podcast. Stefan is implementing Siemensstadt Square together with his team. At this point, a very warm "Hello" dear Stefan.

Stefan Kögl

Yes, hello Sarah, I'm looking forward to our conversation today.

Sarah Tietze

More than half of all people worldwide live in cities. And yet cities account for only 3 percent of the world's land usage. These figures are particularly interesting when you consider that 80 percent of the world's energy consumption and CO2 emissions take place in these small areas. And yes, you guessed it, the trend is rising. So if we want to create a more sustainable future, we should take a close look at our cities. Can smart technologies make our cities more sustainable, maybe even more inclusive? How exactly can that work? And what is the downside of a smart city? I know these are not simple yes or no, clear cut questions. That's why I'm delighted that we have a guest today who knows the facts, who deals with smart technologies and the city of tomorrow on a daily basis, and who therefore certainly has many insightful answers for us. Matthias Rebellius is a member of the Siemens Managing Board and global head of the Smart Infrastructure Group. Dear Mr. Rebellius, a very warm welcome.

Matthias Rebellius

Yes, a warm hello also from my side to you Ms. Tietze, and also to you Mr. Kögl. And to those listening to this podcast and those interested in Siemensstadt Square.

Sarah Tietze

Dear Mr. Rebellius, dear Stefan, we set a big goal today. We want to discuss whether and how intelligent technologies can make our cities better. And I can already guess that our discussion will certainly be technologically complex.

But before we get into the smart waters, let's first start with my favourite warm up. I'm going to give you 5 sentence starters that I'd like you to complete. And I think these sentence beginnings or completions reveal a lot about our guests. Mr. Rebellius, here are the five sentence starters for you: In ten years, a city will...

Matthias Rebellius

...have fewer CO2 emissions than today.

Sarah Tietze

From my point of view, the highest priority is...

Matthias Rebellius

...to make the infrastructure smarter.

Sarah Tietze

Berlin is...

Matthias Rebellius

...a capital and pioneer for start ups and innovation.

Sarah Tietze

Sustainability means...

Matthias Rebellius

...to consume only what the earth allows us to consume.

Sarah Tietze

And Mr. Rebellius, if you were 18 again, you would...

Matthias Rebellius

...that's a difficult one... then I would continue to live, as I have always done, in the here and now.

Sarah Tietze

Very nice, I understand that well. Stefan, over to you. Smart technologies...

Stefan Kögl

...give us the means to meet the challenges of the cities of the future.

Sarah Tietze

The city I want to live in....

Stefan Kögl

...is a city built, made for all people.

Sarah Tietze

This year has shown me...

Stefan Kögl

...that technologies can make everyday life easier without defining it.

Sarah Tietze

Five years ago, I would never have thought....

Stefan Kögl

... that I will work and live in Berlin and also get to help shape a piece of Berlin.

Sarah Tietze

Yes, that's right, we do. The smart city concept...

Stefan Kögl

Yes, I think I've already explained that several times in other podcast episodes. I don't really like to use that term, but I prefer to talk about what the city of the future should achieve and what people want in terms of quality of life, sustainability and inclusion.

Sarah Tietze

Mr. Rebellius, I think Stefan Kögl and those of us working on the project avoid the term smart city because we also realise that many neighbours still have a problem with it. In the run-up to the podcast, I asked around in the neighbourhood: What does the smart city actually mean to you? Would you like to live in a smart city? And I have to admit that the information I received was not all positive.

One neighbour, for example, said: "Oh, I don't know, I'm a bit afraid that everyone will know everything about me." Keyword: data. Another neighbour said, "Oh, I don't even drive a car, why do I need intelligent traffic lights?" And some people also said that they feared that a smart city would make their lives even more digital, even more hectic. Can you understand these fears and concerns?

Matthias Rebellius

Yes, absolutely. First of all, you have to take them seriously. And I can also understand them and comprehend them, also from a personal point of view. Because not everything is transparent for everyone, nor is it important for everyone. And then this term smart city is perhaps also misleading or not understood. And that's why we have to break it down. What are the real advantages? What makes it better? And I believe that a city that emits less CO2 and a city that has a better organised traffic flow, is more relaxed for all citizens and therefore is less hectic than it is today. And that would perhaps be such a pragmatic point or example: you can tie it to that. So, I can understand that data security is a topic that we will certainly talk about, which is very important and privacy is also important in this environment. And digital and stressful... yes, that is perhaps also a generational issue and also an issue of how far you want to let it get to you. I think we generally have to talk about the advantages and make them easier to understand.

Sarah Tietze

Yes, you're right about that. But you also scare me a bit when you say that a more digital city is absolutely not a more stressful city. Stefan, can you understand our neighbours? Where does this fear come from?

Stefan Kögl

Yes, I also think, as was just said, that the term is not defined in terms of everyone knowing what is meant by it. There was also a study by the Berlin Senate in 2019, in which it became clear that a large part of the population simply does not know what this term means, or at least has very different interpretations of it. And, this is always in reference to our district so that.... The fears I think arise because you build a kind of technology-driven environment or even technology museum, and only focus on that. Those are, I think, the fears that people have. But it's the other way around. The technologies are supposed to help us, they are supposed to make it more transparent. I would like to mention the concept of the measuring many needs, which is very necessary and important here and should show citizens every day where they actually stand. For example, my favourite topic here is always the ancillary costs when I live somewhere. With today's technologies, it's easy to show every day where you stand at a given point. And these are the overarching goals also in terms of technology and smart city strategy for our project. That we become sustainable here, that we really guarantee sustainability. To create a resilient district, a long-term district, a future-proof district. And also an inclusive district that ultimately gives everyone the same opportunity to feel good.

Matthias Rebellius

May I add something to what you said? You will be reassured when I say that the digital city is less stressful. One point is very important here, and that is that everyone can choose. Digital life can be extremely stressful, but it can also make my life easier. It can also be more inclusive. But it can also make it easier for me to do things that might take time away from me. And the things I don't like to do can leave to autonomy. Some people love to drive, others don't, for them it's a hassle. For them, autonomous driving would be a relief. Now that's an extreme case. But there are also smaller things. I don't want to worry about the climate control in the building and its settings. I leave that to the autonomous building and have more time to listen to a podcast, for example, or do something else. But if I try to do everything at the same time, because digitisation allows me to do three or four things at the same time, then I might cause myself more stress. That's why it's up to us individually. That's how I see it.

Sarah Tietze

Okay, exciting. So, it is on offer for the citizens and they can choose to accept it. Now let's take a closer look at the smart city. I also noticed from the fears of the citizens that it is perhaps not possible to have a complete overview of which elements need to be tweaked. So what are actually the core areas we are talking about? Beyond the smart traffic lights, perhaps? Mr. Rebellius?

Matthias Rebellius

Yes, smart traffic lights are now being mentioned. The first traffic light was in Berlin.

Sarah Tietze

At Potsdamer Platz, exactly, yes.

Matthias Rebellius

Exactly, on Potsdamer Platz, and that was also very smart at the time. And now there are new traffic lights. The intention is the same, but the effect is of course completely different. It's multiplied, multiplied by a thousand. Now they optimise the flow of traffic in order to make life easier, better and safer. So that brings us to traffic. The three defining factors are, of course, firstly the transport infrastructure. With Siemens' participation and of course with a very strong focus on electromobility, the IAA in Munich is currently working on modality concepts that go beyond individual driving. Switching from personal vehicles to sharing models or to public transport.

How these concept can be best coordinated. There is huge potential here to make the city and city life smarter. The second, of course, is the energy concept. Switching to renewable energies, to decentralised energy concepts, which of course would not be possible without digitalisation.... And here I would once again appeal to everyone to also becomes aware of this. If I replace energy generation in a power plant with thousands or tens of thousands that communicate with each other, it won't work without automation, without smart grids and software. And that's where digitisation is needed. And the opportunities and possibilities are there. We also have showcase projects and examples in various regions that we can use for this. And then there are of course buildings, where we in my opinion as an outdoor fan, not only spend too much time, but also still use too much energy. That means consumption reduction goes hand in hand with optimising generation and transportation. So I think we've addressed the three main defining factors within a city - in the surrounding area, of course, there are other factors such as agriculture. And that's why it's important to understand and address all three.

Sarah Tietze

So, I understand very well. We want to optimise traffic. For the citizen, that means less stress, better utilisation, fewer congestion problems, fewer cars on the roads. We actually want to make the buildings smarter, you could say. So that means they need not consume so much CO2 and we want to optimise energy. These three things I understood well. But what technologies would you use to do that?

Matthias Rebellius

Yes, we are talking about the "all electric world," so to speak. Electrification is a very, very important factor in this. This means that we heat and cool electrically using renewable energies. That we drive cars electrically. That we also store the renewable energies in batteries or in hydrogen. Of course, only in conjunction with renewable energies. And then the technology in the building is of course sensor technology - that is enormously important. Sensor technology, I know how... Sensor technology enables buildings to talk to us. And when buildings talk to us, then the software can interpret that and algorithms can then optimise the buildings accordingly. That is then the autonomous building. And the autonomy in a smart building is linked to a smart grid. That means I need technologies that can also change the grid in a matter of seconds, switch it on, switch it off, reverse the direction of the energy flow.

And this is simulated beforehand with a digital twin and then mapped in reality. In other words, the interaction of smart grids and smart buildings in a completely electrified world are the main technologies.

Sarah Tietze

Smart buildings, that interests me. I haven't quite understood the concept yet. That is, when the building talks to us, it tells us how much energy it's using and how the whole thing can perhaps be made more efficient. Or how does that work exactly?

Matthias Rebellius

If I have parts of the building that are being used less or not at that time, then I can of course control and optimise the air conditioning and lighting. But I can also see that no one was there all day, so no one has to clean in the evening. I can also optimise the service calls afterwards and the cleaning afterwards and thus not only save costs, but also resources. Now, when people come back to the office, I can make the seats bookable, I can make meeting rooms bookable and thus control the efficient and COVID-compliant use of buildings. These are all functions of intelligent buildings, based on sensors and algorithms coupled with software technology.

Sarah Tietze

It's exciting that you also mentioned COVID. I've noticed, for example, that the pandemic has made me use my apartment in a completely different way. Unfortunately, my apartment is still pretty un-smart, but if it were smart now, it would automatically show me where in which room I need to heat or ventilation and turn on the lights in order to reduce CO2 emissions as much as possible. Right?

Matthias Rebellius

It would also monitor air quality, today of course... that also includes aerosol filters. I can ask: which aerosols are in the air? And with aerosols, as we all now know from the one and a half years of pandemic, it is very important that they are filtered and filtered out. That means that new technologies are also in use here. Absolutely. That means that it starts in the smart home, which is not our area of activity, but that is of course just as important for a smart city, which we have not addressed yet.

Sarah Tietze

Exactly. Yes, exciting. Stefan, if we jump into Siemensstadt, completely different dimensions are of course possible.

That is to say, I'm talking about my apartment now, but in Siemensstadt, schools, nurseries and other municipal facilities are also being built, which can then of course be designed to be smart. What exactly is being built here?

Stefan Kögl

Yes, you already mentioned that the social infrastructure is of course a very important component, because we will also provide housing for 8,000 people, which means almost 300,000 square meters. In addition, there will be restaurants and retail outlets. Of course, the question here is: what will be the demand for gastronomy or retail in a city in 20 or 30 years? There is a lot of development going on at the moment. We will have about 400,000 square meters of commercial space and 200,000 square meters of industrial space. Very important to mention. In an urban setting, industrial is certainly unusual in a development like this. At least there is no comparable project right now. And referring to what Matthias Rebellius just said, we are of course at an advantage because we often come from an urban environment, as you also mentioned Sarah, where of course the digital data from the past is not so available. We are planning a district from scratch. So, even if buildings are already there, we are starting or have already started urban planning. That means we can and are in the process of planning the city digitally. Exactly what Matthias Rebellius mentioned. We can simulate, we can optimise via the planning process, and only then can we consider real implementation. And it is certainly essential that we have a different mobility concept here. The traffic lights have just been mentioned, but the questions we have is how much autonomous traffic will there be, for which we of course need a networked urban district. And of course the question is also, where do we have quiet spaces in the city? Also very important to mention again. So where can people spend their time? Where are the green spaces and where is the quality of living in everyday life? Perhaps the most important overriding goal - and this is only possible with digital and smart solutions - is CO2-neutral operation. Because what has already been said opens up the possibility of optimising the use of energy flows, for example, to optimise resources and ensure such operation.

Sarah Tietze

A digital twin is also a good way to make an entire district smart and to offer citizens the opportunity to navigate through such a district without stress. Will there be something like this for Siemensstadt, i.e., a project that Siemens is developing for an entire district? What is a digital twin and how can it help us?

Matthias Rebellius

Yes, absolutely. Perhaps Mr. Kögl will have to intervene again later - not that I'm promising too much - but the expectation is that we will also create a complete twin of Siemensstadt Square.

We have already seen this in individual buildings, such as Wittelsbacher Platz, here, and also in customer projects, where it is becoming more and more common to actually build a twin. I always say: the most efficient way is to build a building twice. You build it once digitally, simulate it, optimise it, and then build it properly. And that's also the claim that comes out of this technology in "Building Information Modeling," as it is called. And this, on this entirely new - rather not new but redesigned district, is of course an extremely exciting thing. And also not only a challenge for the technology but also a proof point. And that, that is something we will have. As a result, it will be possible to continue to compare reality with the virtual or with the target value during operation, and thus influence and optimise the control of the infrastructures, making it more usable. This again creates value for the users, for the residents. And so you can also imagine that for each device or for each device which is somewhere in the buildings, there is a coordinate, a point where the system knows what is where and how it can intercommunicate and ultimately optimise processes. So, of course, many new usage cases are emerging. I think this is also a nice playground for startups, which we have also included. Yes, Siemensstadt Square is also an innovation lab, so to speak, where we want to and will try out new things. I think that's a very nice basis.

Sarah Tietze

That means that I would then have the whole Siemensstadt Square on the smartphone in my pocket, Stefan?

Stefan Kögl

Yes, I can only confirm that. Of course it would be possible. I would mention the term "digital master plan" here. So, that doesn't mean that this is a plan now, but digital master plan means, in which stages, which modules will such a digital model, a digital twin be built. And the whole thing starts with the GIS model, i.e. the GEO information systems that already exist in the city of Berlin for the entire urban plan, in which our master plan is integrated and then, as already described, right down to the individual building. At this point, it is perhaps also worth mentioning that this is being developed in a very interdisciplinary team. So there is the project team, there are very many colleagues, including here from the Smart Infrastructure unit, who work here or with whom we work together as a team to develop the requirements of the future. And so, in the end - to answer your question - something digital is created that can be viewed on a smartphone. From the very big, city of Berlin, right down to the details, ultimately right into the apartment in which you might live.

Sarah Tietze

That is, if I imagine it: I am now a resident of Siemensstadt Square in 10 years. I live with my family. Then I can wake up in the morning and see how much my workplace is being utilised? How are things at the daycare center today? How many of my children's friends are coming today? And how are the S-Bahn connections today? That means all of this together in one app or in one application. Is that the big vision or am I going crazy here?

Matthias Rebellius

That's still open. You can develop what is there. But I think the important thing is, the digital twin is not an app, but a common data set that allows us to create and then make applications that we can think of that make sense to us. And that is, of course from an anonymised data set. No one is interested in whether the child's friends at the daycare center are there or not, and no one should know. I think that belongs to the topic of data privacy, but these details. Simply: what is the occupancy rate? Is it overcrowded? Where is there still space? That's fine, and that's also the intention behind it. So, it's important to understand: the digital twin is a database that is created during planning, during construction, that is always kept up to date, so to speak, over an entire life cycle. It then not only optimises construction, but also where 80 percent of the costs arise, namely over the life cycle and also the operation of the building. This platform can be used by applications, be it by Siemens, be it by residents, by users, by companies, by partner companies, start-ups, which also offer services for the residents and visitors of Siemensstadt Square.

Sarah Tietze

Very exciting. Mr. Rebellius, you just mentioned the topic of data privacy, and of course that's something that everyone is interested in. How do I manage, on the one hand, to obtain a lot of data in order to implement what you have just described, and on the other hand, to handle the data, the personal rights and the data of the citizens in such a way that they do not interfere with data protection?

Matthias Rebellius

Yes, this is a very important issue for us, and I'm not just speaking for Siemens here, but for everyone involved in the project, including the city of Berlin, the entire German government, but also the entire industry.

The one thing that is important is that we take it very, very seriously. That's why you also have to say, what data is actually important. Just for fun, if return to your daycare example.

It's not about who it is, who the person is, that actually doesn't matter at all for the operation of the infrastructure. And with that, all the data can be and is completely anonymised on the platform and cannot be assigned to people. That's different. If you have a banking relationship or if you are on social media privately, then the data is of course personally assigned to you and also contains your personal data. That's different here, and that's why I think we should talk about it less critically, but nonetheless sensitively and with the highest level of transparency.

Stefan Kögl

Perhaps I could add something, because we are also experiencing this today in the social media. It really will be the great responsibility of every individual how he or she handles his or her data. Because of course these possibilities also offer, as in the daycare center example, that one has the option to personalise it so that a friend sees when the other friend is at the daycare center. And as I said, it's up to the individual to decide to what extent they want to share this data. And that's also a bit of a phenomenon today, that the individual is strongly motivated to deposit their data somewhere on the net. But as I said, it's the individual's responsibility, which can't be taken away from them. As I said, anonymous data is perfectly adequate for purely personal needs.

Sarah Tietze

Exciting and as Mr. Rebellius said, this is all an offer for all citizens. Last time we had our podcast with Raul Krauthausen and talked about how important it is to build a city for everyone, a barrier-free city, an inclusive city. Can smart technologies do something here as well? Can smart technology also make a city more inclusive?

Matthias Rebellius

Yes, absolutely. Not only the city, but also life in general if it is used correctly. If you now, you don't only need to talk about autonomous driving, you can also talk about... I think there are many digital solutions and ideas to make life easier and more liveable for people with disabilities. There are also many services where digitalisation can be used for this purpose.

At the IAA, at the motor show in Munich, we showed how autonomous charging works, autonomous charging, where you don't even have to get out of the car, where a robot charges your car. You just drive up. In that case, it was even an autonomous vehicle that was charged autonomously, which is perhaps a step further forward.

But I also spoke with Raul Krauthausen about the fact that we take these tips, which also came from the social heroes, very, very seriously and have also taken them as an incentive to make our charging infrastructures more inclusive. These are simple things, as he said, meaning simply installing them at the right height so that also accessible on the columns. It's not just about being autonomous and automating everything - that might be the end state. But that is certainly the case, and we will continue to work very hard on this, because only an inclusive city is also an intelligent and smart city.

Sarah Tietze

Stefan?

Stefan Kögl

Yes, I would perhaps like to add to that: The networking of transport systems, for example, is a very important component here. This means that a person with a disability, whatever type, can be offered appropriate mobility concepts or transport systems. To rephrase it, if a person wants to get from A to B and an app can certainly say in that case, for example, that you can walk there. If that person is perhaps blind - then there is another means and so on. Or a wheelchair user, because maybe an elevator is broken somewhere, an app can tell him, you have to go this way and that way or you can go this way and that way, such that he doesn't get held up at any point. And these are very interesting and very important ways to enable a self-evident everyday life without permanent barriers.

Sarah Tietze

Yes. Very, very exciting. I have really learned a lot and really understood that the smart city is something that is offered to the citizens and a method to make our city more sustainable, more inclusive, more liveable. And that everyone is also asked to participate, but that everyone should also understand this only as an option. Mr. Rebellius, thank you very much for that. Is there anything else that we haven't covered that you would like to share with our listeners?

Matthias Rebellius

Yes, maybe... First of all, I think Siemensstadt Square is an extremely exciting project, because it is made up of and therefore also addresses not only the employees of Siemens' needs, but also the partners and citizens of Berlin and its future residents. This then comes together in a long-term plan, and with innovative spirit from the past a historical piece of land, so to speak, will continue to be characterised by technology.

But not technology for its own sake, but rather something we call "technology with purpose" is the motivating factor. This means making life more worth living and not more stressful for those who may have made that point, rather more digital, simpler and more individual. That means you can focus on the things that are really important to you. And that, as we all know, is a very individual question.

Sarah Tietze

Thank you very much, Mr. Rebellius, that was a wonderful catchword. "Technology with purpose" means that we make technology with the purpose of making our cities of the future more liveable and sustainable, and perhaps also a little more inclusive. Thank you very much for the exciting conversation with both of you and our dear listeners, have a great day. Thank you for listening in and be sure to join us next time. Bye! To the future Siemensstadt Square.

Stefan Kögl

Thank you Mr. Rebellius, thanks Sarah.

Matthias Rebellius

Thank you. Good bye.