Keys to
Intelligent
Industry

with Caroline Segerstéen Runervik
and Fredrik Gunnarsson

EP07

Navigating academia and business for future innovation, with Lena Miranda, Linköping Science Park

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[Guest] **Lena Miranda**

If you have a high adoption level in the entire society, then you get more competitive as a country and that is something I think that Sweden could gain from.

[music]

[Host] **Caroline Segerstéen Runervik**

Welcome to Capgemini's podcast Keys to Intelligent Industry. And of course I have with me today, Fredrik. How are you today, Fredrik?

[Host] **Fredrik Gunnarsson**

Very well, we are recording on the Friday here and get a bit of a Friday feeling, so that's good.

[Host] **Caroline Segerstéen Runervik**

Indeed. And for you and me, it's very special because we are on our home turf, Linköping. Right?

[Host] **Fredrik Gunnarsson**

Yes, you can imagine it's a bit of a coincidence, but maybe it's not a full coincidence, after all, we're both from Linköping, so, really exciting to see the development of the industry and what we're gonna discuss here today in Linköping.

[Host] **Caroline Segerstéen Runervik**

And Linköping for you, who don't know, is today called the Innovation Hotspot of Sweden. So of course we have a very, very interesting guest with us here today. So, Lena welcome, Lena Miranda.

[Guest] **Lena Miranda**

Thank you very much.

[Host] **Caroline Segerstéen Runervik**

You are the CEO of the Science Park in Linköping of the business science park, and you're also the chairman of the International Organization for All Science Park in the world. Welcome!

[Guest] **Lena Miranda**

Thank you so much.

[Host] **Caroline Segerstéen Runervik**

Looking at your passion, you've always been working in the midst connected to innovation and technology, and you've always been working closely to the academic world, to science and of course to the business community. So, tell us a bit more about your passion and how did you? How did your journey start?

[Guest] **Lena Miranda**

Well, it's a very good description. I am very pleased to work in the intersections between the academia, the business community and the society. And I think there's a lot of exciting things happening in that intersection me myself, I studied at Linköping University. So, I studied social science and also media and communication. And then I studied also how technology affects society and what happens when we get new technology in our hands in society as individuals, as organizations, so that is very much my passion. Of course, I also am very passionate about entrepreneurship and seeing new ideas come to life. And it's always people behind all ideas. All new companies, all organizations. So, the people perspective, I think it's really interesting and to put bright people together and see what's happening there

[Host] **Caroline Segerstéen Runervik**

Yeah. Someone told me you're the best matchmaker, right?

[Guest] **Lena Miranda**

I love matchmaking.

[Host] **Caroline Segerstéen Runervik**

And coming back to innovation, you also actually been part of the Swedish Innovation Council. So, innovation is something we will come back to throughout our discussion here today. But looking at a science park, what is the purpose of a science park and maybe also you can give us a bit of hints of what is specific or what is very, very special when it comes to Linköping Science Park.

[Guest] **Lena Miranda**

I would say like a science park is an independent and non-profit platform. Gathering people and building networks, giving the meeting places and actually being able to gather the right actors when we need to address a new

challenge in some way. It could be market pool, or it could be society needs that we want to address together, and we want to do it in the intersections between the business, academia and society perspective and also taking Civic Society into consideration. And as a science park, we work a lot with those collaborative processes. We use different methods, different projects, and processes in order to drive change, drive transformation. And when it comes to Linköping Science Park well, we have tried to define our organization as working with talent attraction and competent supply because this is key to all the companies in our community in the science park. To secure that they have the right competence within their companies in order to grow and to transform to be competitive in the future and we also work a lot with supporting scale up companies that want to grow and giving them the right support, but also companies, existing companies that need to transform that want to innovate something new, maybe change their market, their business model, bring in new technology. So that is kind of our service to the companies and community

[Host] **Caroline Segerstéen Runervik**

And just to give everyone a little bit of size of what we're talking about, you have like 14,000 people actually connected to the science park and more than 660 companies. So, it's quite an amazing network that you are creating here to really drive innovation. But you also mentioned that you, one of the specialties you have is combined technologies. What do you mean by that?

[Guest] **Lena Miranda**

Yeah. Well, combined technology, so within the core process that we call innovation and transformation. We work especially with three different technologies and that's IoT and connectivity, it's AI and its cybersecurity. Then we are also connected to some of our regional clusters, among them Vicious Sweden, working with visualization and image analyzed, but also advanced materials that we also have in this region. And when I talk about combined technologies, I think it's in the intersection between, for instance, connectivity and AI that we see, interesting things happening AI and cybersecurity and so on. And sometimes we talk about how the data flows through those technologies like connectivity, using sensors to gather the data. Then managing the data and then we maybe can use AI to make analysis and predictions to get better ground for future decision making and visualization to visualize the complex data collections that we have in order for us as humans to navigate in society in a good way and of course cyber security and security is important in all technology advancements because of how the world is getting. That it's good to a large extent, but it also comes with new vulnerabilities.

[Host] **Fredrik Gunnarsson**

Practically, how? How does it work?

[Guest] **Lena Miranda**

How does it work? And of course it depends on what kind of company you are. If you are in the forefront of technology, then maybe you would like to engage in in collaborative projects together with academia or driving towards sustainability or climate change or something like that to applying your technology or enhancing your technology to understand what's the new next thing. If you are a company that is not as digital advanced, maybe you rather would like some kind of onboarding process and then we can offer like AI boost. If there are companies that have a lot of data, but they don't know how to sort it, they don't know how to use it in order to use it in their in their future business models and to actually gain profit from it. Or we could have another onboarding process within IoT and connectivity that we call connect yourself and then we can explore different sensors and different IoT technologies that might suit your specific company need.

[Host] **Caroline Segerstéen Runervik**

So, it's truly match making in the end.

[Guest] **Lena Miranda**

Yes, it is.

[Host] **Caroline Segerstéen Runervik**

So being, then the chairman of the International Association for Science Parks. Do you see any difference across different geographies?

[Guest] **Lena Miranda**

Definitely I do. And in the same time as we are like in so many ways, there are also differences and some people say like if you met one science park, you have really met one science park because we are all like the result of a regional and local context, which is like, what is the business community in my geography, like what are the different industry sectors that have advanced over time in my region? What is the specialties of the university and academia which is close to my science park and of course, what are the governmental agencies that are based in our location, so all these forms kind of the regional local context and on top of that of course culture and behaviors. How we collaborate with one another and what is like the unique uniqueness of your region or your city?

[Host] **Caroline Segerstéen Runervik**

Is there a benefit of having this collaboration?

[Guest] **Lena Miranda**

I definitely think so. And I mean we are celebrating 40 years as a science park this year.

[Host] **Fredrik Gunnarsson**

Congratulations.

[Guest] **Lena Miranda**

Yeah. Thank you very much. And then if we, which you do when you celebrate something, you look back and learn from history, we can see that we have made quite a lot of achievements in our region, not only when it comes to technology advancements, putting new innovations on the global market, which we have a number of them. But also, when it comes to regional and local growth, economy growth and of course, employment. And so now we're adding on like the social and green perspectives, so that we have a vision and a mission that includes green social and digital transformation to drive economic wealth.

[Host] **Caroline Segerstéen Runervik**

And of course it's a great asset also for the university. Itself, right. For really fostering the collaboration. But I still need to ask you as you now have this role and have the opportunity to actually visit quite a few other science parks, which is the one you would say this one is one of the most coolest when it comes to innovation or maybe just surprised you the most.

[Guest] **Lena Miranda**

Ohh can I just come back to the question about how it differs around the world? Because I would say like in many of the emerging markets, I find that the government, the governments use science parks as a tool for driving innovation and growth much more than we do actually in Europe, so like if you go to Asia, you go to Africa, you go to South America. They establish new groundbreaking projects when it comes to science parks and new city districts, whiles in Europe we tend to put a lot of focus on our incubators, supporting the startup companies and also in our clusters driven by, it could be, of course both competence driven clusters, but also, industry sector driven clusters, but I feel like the science park and the place based innovation hubs have maybe not such a central role in the European or national perspective, but more in the local and regional perspective and I think that's something that we might consider is that a good strategy or should we...?

[Host] **Caroline Segerstéen Runervik**

So, we could leverage it much more. And again, actually we could have more support from the government to see the potential with it. Interesting, but I'm sure we're coming back to that. So, Fredrik, should we deep dive into a few of the technology topics?

[Host] **Fredrik Gunnarsson**

There's so many interesting things you do in Linköping science park, and you mentioned some of them already. And for someone who's a bit of a tech nerd and it's, it's truly like going into candy store when you discover your homepage of all the all the things cool stuff you do a couple of things which we could discuss more specifically maybe. For example, IoT world, you mentioned that it's the largest community for IoT in Sweden. Can you describe what you do in the IoT world community?

[Guest] **Lena Miranda**

Yeah. So, I think we are like 80 or 85 members at the moment, and we actually have close discussions to IT suite and to see if we can lift this clustering community into a national community gathering more IoT companies in Sweden. But of course, our society is getting more and more connected, and we have a lot of sensors. We have a lot of data that we want to leverage further. And in the IoT world cluster, we gather not only companies actually, but also researchers, of course, and the public organizations and what have come to be our focus in the cluster is sustainability and climate change, how we can use this technology drive future projects to also address those really important questions. And we do different things. We have a lot of open events where we learn about new technology, new IoT solutions. We have some events where we gather in a lab to evaluate different IoT technologies and we also try to drive different projects.

[Host] **Fredrik Gunnarsson**

Fascinating now and in the other area we just there's a number of areas again, but one other area is what you call the visual Sweden and focusing on visualization and image analysis. Which is also an area which is we are working very actively with and. Can you describe what do you do in that area?

[Guest] **Lena Miranda**

Yeah, it's actually a very fascinating cluster and it comes from also based in research at Linköping University, where the researchers in Norrköping is very, very good in visualization researchers in Linköping in Image Vision. And then we also have confidence within AI in both of our campuses. And this is used on one hand to drive really

groundbreaking research when it comes to establishing new platforms, for instance, like doing a digital twin of the body or doing a digital twin of the industry applications or doing a digital twin of cities. And then you can connect a lot of companies to work on those platforms with their own applications and develop new products and solutions on this neutral platform. So that is what we do on the research hand. On the other hand, for instance, we also introduce new products and services on the market and then we have the lead business incubator, which is owned by Linköping University, that, for instance, have the entrepreneurs in residence program where we can hire students to actually evaluate and test new solutions. And is there a market fit them? Do we believe this has the right composite to make it for a new startup?

[Host] **Fredrik Gunnarsson**

This is an area where there's so much fascinating use cases and applications. You mentioned some of them. Those ideas have been around for a while, and we now also see that they more and more come to life and at its scale, what you see is needed to, you know, get this really rolling in a larger scale, yeah.

[Guest] **Lena Miranda**

Yeah, accelerating. Well, I think that the combination once again between visualization, AI and image vision is key to this. It's easy for anyone to apply AI today and we need to have similar kinds of instruments when it comes to visualization and using AI, image vision in that work future wise.

[music]

[Host] **Caroline Segerstéen Runervik**

Looking at development, we had an interesting discussion on we are very much engineers who love to sit in, you know, our Home Office and develop and do something perfect before we go to the market. Yeah. And what's your what's your take on this? Compared to the US for example.

[Guest] **Lena Miranda**

Well, I've been traveling to the US, and I've got the opportunity to meet a lot of innovation hubs over there. And I am seldom impressed by when it comes to technology. Then I get more impressed travelling around Sweden and not least in our region and find new groundbreaking technology achievements. But when it comes to business development, access to funding and really having this mindset. Testing, testing, testing. Fail fast to do it once again and make sure this actually is something that the customer is requesting that you develop it. It's quite different from what I see in Sweden whereas you say, we tend to develop, develop, develop and I don't really want to show you this because it's not really finished, but you need to go out and really get the response from your customers from other developers and so on. All the time. Agile, Fast forward.

[Host] **Caroline Segerstéen Runervik**

I think we have a very, very strong entrepreneurial culture and you know, that's why we've been growing these amazing companies over time. And I think we should nurture that. But I think we do need, and we need more support in terms of less regulation and more support for the government. So, what would you say if you if you could ask and go to government and say this is what we need to sparkle the innovation in Sweden as we speak to really manage the situation as there is a big threat both from China and from US. What would be your ask?

[Guest] **Lena Miranda**

For instance, something I think government is doing very well at the moment is like we are developing a strategy for future technologies in Sweden, and I think that is really important for everyone to understand and also for us to decide what we want to invest in, because we cannot be best in everything we need to choose and we need to. Maybe also align with the European strategies when we do our national strategies, so that is something I think we're doing really good. I would like to see how we can complement this future oriented strategy with also how to adopt new technology on a broader scale among small and medium sized businesses, the public sector, not the least because we're lagging behind and also on the individual basis and there's a term called diffusion by a researcher called Jeff Thing, which I think is really important because that's all about adaption and implementing new technology on a wide scale where countries can compete, and if you have a high adoption level in the entire society, then you get more competitive as a country and that is something I think that Sweden could gain from.

[Host] **Caroline Segerstéen Runervik**

For sure, absolutely. I totally agree. Looking at them at the competence topic. I mean we see it and Sweden Tech is telling us, you know, every year about the lack of technology skills, really technology, software developers, you know, we need a couple. I think it's 20,000 plus per year more than what we have over the next 3-4 years, so we really lack technology competence, and it starts early. The fact that we have less students choosing the technology programs, and I know in the science park you actually start already from the childhood. So, to say to encourage children that technology is interesting and then, of course, inspiring the students etcetera. Can you tell us a bit more about what you actually do?

[Guest] **Lena Miranda**

We are very passionate about empowering young people and get them to learn new technologies. So since 10

years, we actually had the code summer camp where we invite children from the age of 7 up to 17. To learn initial programming using scratch and other simple programming tools in order to get going and to open their minds and see this is fun. This is really something exciting and something that could help me on my future career, of course, but also navigating society as a citizen actually, and understanding how technology affects society is also a democratic question. But we also work to support more young females to choose the STEM subjects. And we work to integrate international talents into the Swedish labor market and looking at the demographics like Sweden, we don't give birth to enough young Swedish people. So, we need to think wider when it comes to skill supply. And access the international competence where remote working could be one perspective but also attracting startups that want to come and work and help us develop our corporate and our public sector.

[Host] **Caroline Segerstéen Runervik**

And you just currently actually running some sort of program for remote working and see how you can encourage to actually get access to competences from really remote places across the world as we speak, right?

[Guest] **Lena Miranda**

Yeah. We do like in different perspectives. One is the startup arena that we call index where we work with the Saab, Toyota material handling Europe, and Husqvarna. And there we kind of source startups to come and work with them and they inspire them with new technology, new business models, but also in the fast pace and agile working in ways that startups have so that is a very inspiring program where we also see it as we borrow the competence from different parts of the world. And of course, Sweden. And it's a mutual learning and understanding. But then we also are beginning to look at remote working on a broader scale. We went to Kenya last week and we have in Sri Lanka, India and Croatia for instance to see how we can access the unlocked talent pool globally to support Linköping companies or Swedish companies for that matter.

[Host] **Fredrik Gunnarsson**

Interesting. Yeah. No, coming back to that trip to Africa and Kenya that that was seems like a truly amazing trip. Can you share a bit perspective after such a trip? What? What do you discover when you discuss innovation and development in, in, in such country?

[Guest] **Lena Miranda**

Yeah. To begin with, the International Association of Science Parks and Areas of Innovation Cover about 320 members from 76 countries. So, it's truly a global network and we do a lot of peer learning, exchange a lot of insights and new knowledge on policy and regulation. As we discussed before, but also on what kind of service offers we give to our different communities. And so, getting the chance to visit Kenya and Africa as a continent was really super inspiring and the theme of the conference was demographics and technology and entrepreneurship, which is a very interesting mix since we talked about the demographic. It's like in our part of the world, the population is aging, but in their part of the world, the population they have, like a median age at 19 and it's actually getting younger as we speak.

[Host] **Caroline Segerstéen Runervik**

So, an opportunity.

[Guest] **Lena Miranda**

An opportunity that the unlocked potential of a new talent pool. If we find the ways to bridge culture wise, understanding one another, empowering the youth population in these different countries and continents, we can supply our confidence needs in a good way, I think.

[Host] **Fredrik Gunnarsson**

What are the differences and the similarities in the way they work with the innovation areas and science parks in in that part of the world?

[Guest] **Lena Miranda**

What I found was they tend to rely a lot on infrastructure investments and buildings and making sure that you have a digital infrastructure. Yes, of course, education and giving the entrepreneurial skills what I lacked and that I told them was that like you, you have this amazing other culture and the heritage from your country and your continent and very specific societal needs that you could address by empowering your own people. So, I think that made a very interesting conversation.

[transition sound]

[Host] **Caroline Segerstéen Runervik**

It's going to be interesting to follow and actually we talked about it. It's a continent we do not work that much with why there are other global players. So, to say in the least, China is super active, right?

[Guest] **Lena Miranda**

Yeah. And a reflection from my side is like do we? Because I mean we have been very engaged in Africa earlier and

colonized half the continent. So, is that like we are afraid not to do that mistake again? Is that why we are not there? But on the other hand, as you say, a lot of other countries and not the least from eastern countries, are very present in Africa and I will the need for Europe and Sweden to engage more in the future of Africa because it's such a high potential but it's unlocked and we're not there, so I would encourage anyone to look at and can I just mention a great example because we had the Kenyan ambassador visiting the park like the Friday before. We left and then we connected to Swedish startup that actually started here in Linköping in 2017 and then relocated to Nairobi, Kenya. And I got to visit them when I went down to Kenya, and they are called the Rome electrics, and they design and produce electric motorbikes and buses. So, there are already like 1000 motorbikes running on the streets of Nairobi and they have a plant where they produce even more. There are 200 employees, 90% of their employees comes from the best universities in Nairobi and around so I thought this was an amazing example and they chose Nairobi and Kenya also because the government is very eager to run and drive energy transition and finding new electric solutions.

[transition sound]

[Host] **Caroline Segerstéen Runervik**

Talking about the energy transition and talking about what you see connected to innovation, I think all of us are a bit disturbed by the fact that are we focusing enough really on the energy transition and sustainability as we speak or has just the hype from AI plus the fact that we have some global challenges taken over are you seeing when you look at your science park? When you look at the companies that you are that you know are growing, is there actually a declining trend of the sustainability focus or is it just that we don't speak enough about it?

[Guest] **Lena Miranda**

I think in one way you are right. I see a declining interest and because of the geopolitical situation, focus on security and safety and mobilizing, not the least defense industry. Those questions when it comes to climate change and energy transition tend to be overseen in some ways. On the other hand, I would say like Linköping at the City of Linköping, the municipality have very high climate ambitions, and there are cities in Sweden that are formed in the Viable Cities program that is run by Vinnova, that have high climate ambitions. And I think we will see the energy transition forward going outgoing from the cities, every decision we make today will affect our children and their children in the future

[Host] **Caroline Segerstéen Runervik**

And therefore, we also have a responsibility to encourage even more girls. The young generation to engage in technology and really make sure that we still can take a lead in this direction.

[music]

[Host] **Caroline Segerstéen Runervik**

I also would like to talk about space. I mean we are in Linköping, and we have Marcus Wint who is the third Swedish astronaut up in space. He was there in January this year. Yeah. So, what about space technology then?

[Guest] **Lena Miranda**

Yeah, I think that's also very interesting area for the future, and I happen to have the opportunity to sit next to Michaels just a few weeks ago and he's also been appointed innovation manager at Saab, which is really, really interesting because he carries a lot of new ideas, insights and experience from his trip to space. Also, we have a really interesting company, also has been out from Saab called Maxar here in Linköping. Who makes a digital twin of the entire globe? Their technology has been used, for instance, when it comes to looking at Ukraine. When Russia invaded and it's their technology that has been showcased around news channels around the world. I would imagine that Linköping will have a place in space in the future.

[Host] **Caroline Segerstéen Runervik**

But now coming to you then, who's been working with innovation throughout your career close to technology throughout your career, if you would give some advice to other leaders working with innovation, what would be sort of your advice to them? I think you partly said it throughout the podcast. To summarize a bit.

[Guest] **Lena Miranda**

Well, I think it's really important to continue being curious and explore new technologies, but also putting change and change management into context and to understand the whole picture because that's when you can make really transformative change. But you have to understand the different perspectives at the and that comes down to the cross disciplinary collaboration and understanding and curiosity about the different perspectives.

[Host] **Caroline Segerstéen Runervik**

And then you know, I would like to ask you, so what is intelligent industry for you?

[Guest] **Lena Miranda**

Vision and mission. And how we can drive change towards more sustainability and climate change using

technology we often talk about tech with the purpose and for us it's all about supporting our local and regional economies, driving digital, social and green transformation.

[Host] **Caroline Segerstéen Runervik**

Really, really good.

[transition sound]

[Host] **Fredrik Gunnarsson**

If we look ahead, what do you see in the area intelligent industry innovation 5-10 years from now? What where do you would like us to be?

[Guest] **Lena Miranda**

If I look on the technology development, I'm really curious as to what the quantum technology will bring to the table, HPC we have a lot of calculation power here in Linköping. Linköping university, hosting the most powerful computer called Berzelius and they are also coordinating the Swedish HPC network and are connected to the European investments for future capability. I'm also very curious about biotechnology and where that will take us. For instance, in Norrköping, we have a research group working on printed electronics and the printed electronics technology can also be used inside the body to detect, for instance, if you're about to have an epileptic seizure and proactively give you the right medicine.

[transition sound]

[Host] **Caroline Segerstéen Runervik**

So, thank you, Lena for a super exciting and interesting discussion, a discussion around innovation, diffusion, about leveraging more remote working from other parts of the world, but also about responsibility that we have a responsibility when it comes to encouraging much more tech competence, but also responsibility, of course, to highlight the fact that sustainability challenge is here and now and we do need to act upon that. Thank you, Lena.

[Guest] **Lena Miranda**

Thank you very much for coming to Linköping, a pleasure.

[Host] **Fredrik Gunnarsson**

Thank you. Thank you, Lena.

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