



Conversation over coffee at Salzer's, a classic Stockholm restaurant. Ann-Marie Åsheden meets with Östen Mäkitalo and Anne Lidgard.

FACE TO FACE:
ÖSTEN MÄKITALO AND ANNE LIDGARD

The Father of Wireless – and a Daughter

By Ann-Marie Åsheden

Östen Mäkitalo is an innovator – especially with his heart. This means that he is incurably inquisitive, he dares explore the unknown, he is not afraid of turning 180 degrees if he sees that he is heading in the wrong direction, and he has absolutely no plans to retire. He has delivered results: he is the father of both the first and second generations of the mobile phone networks, NMT and GSM, and of the Radio Data System, RDS. He saw to it that RDS was a “Home Run”, a wireless communications system.

Although he is an engineer, he emphasizes that utility must be the prime goal when entering unknown territory. During his years as research and development director of Sweden's Televerket (now Telia) and of Telia Mobile, he approved only projects that could definitely show useful applications.

He has a university degree in electronics engineering and had almost completed a doctoral dissertation when he moved into the “real world”. He is known as Mr. Mobile in the telecom industry worldwide. At home in Sweden, an academic institution was named after him: Mäkitalo Research Center at the Technical University of Luleå.

Anne Lidgard is 25 years younger than Östen Mäkitalo, and she belongs to a generation that considers it more natural for a woman to be an engineer. For her, it was an obvious choice. As a teenager, she saw the beauty in

mathematics and the esthetics in fiber optics. It was also natural to move across borders. Anne Lidgard grew up abroad and graduated from high school in France. Twelve years later she had received a doctoral degree in physics from the Stockholm Institute of Technology. Her subject was fiber optics and the title of her dissertation was “On Optical Amplification in Erbium Doped Glasses”. Part of her thesis work was carried out at Bell Laboratories in the USA. She then entered the telecom world. First at Ericsson Cables, then into communications at Ericsson Mobile Data, and then into Geoworks of the USA. In the autumn of 1999, she, her brother and a third partner founded Celltribe, which develops services for mobile applications, including an own portal.

Östen: Celltribe? ... Catchy name. Tribe stands for a family or clan?

Anne: Yes, but we do not associate it with geography but more with an interest community and to the age-old need of communicating, trading, buying, sharing. In the name, we play with the contrast between the old and the new.

Östen: I think it's clever... You were educated in fiber optics but Celltribe involves mobile communications. There's a rather big difference.

Anne: Yes, another wavelength.



Name: Östen Mäkitalo
Born: 1938 in the village of Koutojärvi in Tornedalen, far north Sweden
Resides: In Uttran, south of Stockholm
Family: Wife and four adult children
Education: Masters degree in Electrical Engineering
Job: Senior Vice President, Strategy & Innovation, Telia Mobile
Motto: It is easier to gain a pardon than permission.

» *Some believe a mountain of gold lies ahead.
Everyone wants a piece of it. But I don't believe
that greed drives the actors. They are driven
more by the fascination of what they do.* «

Östen Mäkitalo

Östen: Not only that. An entirely different application ... A large number of companies are working with mobile communications and mobile data. It's a hot field. In Sweden, we have the Mobile Valley, or the Wireless Valley as it's called. Everyone talks of mobile data...

I work at Telia Mobile, which is an operator. The field of portal providers is something new. They can be valuable for us operators since they create more traffic. I don't know so much about this, but I'm curious and will have to learn more. It's possible that this is big... But it's also possible that it's not so large.

Anne: Portal actors work in a growing market, very dynamic ...

Östen: The exciting question is whether there is sufficient power among all these small actors to create this giant market. If so, it would be terrific! Perhaps it will be at least as large as mobile telephony if you succeed.

Anne: The market is quite green. If we talk about the market for mobile services and transactions, it is not large and it is very undeveloped. A year ago, there were tremendously big expectations for WAP (Wireless Application Protocol) technology. Hardly anyone understood what WAP meant. Despite this, Aftonbladet (a Swedish tabloid) wrote: "Stop zapping, start wapping". It was actually more hope than a market, and was mainly a creation of the media. There are still almost no WAP phones and one can joke that WAP stands for "Where Are the Phones?" or "Where Are the Products?" But for me, WAP is only one technology among others.

Östen: I came in contact with what later would be WAP as early as the beginning of 1996 when, with Telia's top management, I visited something that was called the Unwired Planet. We saw a demonstration and thought it was good. Then Ericsson and Nokia took it up. They wanted to develop products and created what would be WAP. But then it was a bit difficult to produce products. Internet has been around for 20 years and for a long time it

was mainly used to send e-mail within the university world. But in 1994-95, people at Cern in Switzerland developed the World Wide Web, and that was the historic event. It opened the doors to the world's knowledge. Suddenly, there was a beneficial use for it.

Anne: And then, when Mosaic created a user interface to the Web that was graphic and easy and intuitive, developments could explode. It was dizzying.

Östen: Yes, almost like a dream. For me it was something tremendous. It wasn't difficult to understand that it could be big. It is almost unbelievable that everyone in the world, no matter where they are, has access to the same information at the same second.

Then there's another thing. That next step, which otherwise takes time, this was not a big leap.

Anne: Many had a PC at home. They were accustomed to use a keyboard. They had built up a behavioral pattern and could learn to use the Web fast.

Östen: And from the start the Web was designed to be used with a PC ...

When it comes to services via mobile phones, the user interface is still complicated. I know that Johan Staël von Holstein, founder of Icon Medialab, says that only two percent of mobile phone users are able to use all the services. That's so. But phones will be made that are intuitively easy to use.

Anne: Yes, that's absolutely necessary. Otherwise, use will be limited to a small niche.

Östen: When the first mobile phones were to be developed, for NMT, there was a basic requirement that they should be like an ordinary telephone – so people would not be afraid of using them. Now, you need to know special things to use mobile phones for new services.

Anne: It's interesting to see how different people view new services. Those who come from the PC and Internet worlds like to believe that the best interface is similar to that of a computer interface. Those who are from the mobile phone world have another view to what is intuitive. I would

Name: Anne Lidgard
Born: 1961 in Stockholm, raised in Belgium, Holland, USA and France
Lives: In Östermalm, Stockholm
Family: Parents and siblings
Education: PhD in physics at Stockholm Institute of Technology
Job: Founder and managing director of Celltribe
Motto: You seldom regret what you do, rather what you don't do.





like to see that the interface is not only transferred from a PC, but is based on something humanly intuitive. It's the service that should be related to the human. One should have voice recognition, utilize all senses ...

Östen: Yes, I can understand that usage differs, quite a bit from fixed applications, since you are in a different situation. When you are home at a large computer you can watch video ... It's difficult to do so in a mobile phone, when you're out in the city. Obviously, an entirely new service form must be developed for this. I can envision having ten icons that take up the entire screen: pay bills, buy stock, check air schedules. Then it can be easy to click on what you want to do. Today, mobile phones are small and fingers are large. Phones will function better with voice recognition. "I want to go to the Opera... Which opera do you want to see?"

Anne: SJ (Swedish State Railways) has a ticket booking service via an ordinary phone. You say, "I want to go from Stockholm to Uppsala on Friday." The computer replies with a question, and so on. Most customers end the booking with "Thank you". It's rather funny: you are only talking to a machine.

Östen: This means it works well. I would think that most important for developments to take off would be by succeeding to make a good user interface. Then it would be a matter of five million mobile phones just in Sweden alone, a nation of 8.9 million people.

Anne: And then we'd have a market.

Östen: It could be rather expensive to develop this. But it wouldn't cost much extra for additional users.

Anne: This brings us to something I wanted to ask you about. Extremely large investments must be made in 3G, the third generation mobile system, both in infrastructure and license costs. At the same time, there are local broadband networks with radio LAN technology, for example, Teli's Home Run. This does not need especially costly invest-

ments and they can be put up in populated areas, exactly in those places where UMTS (the third generation mobile net) is expected to be. What are operators thinking about when they go after licenses and are prepared to invest in UMTS?

Östen: There is a rather large amount of money paid for licenses in England, perhaps 30 billion kronor (USD 3.5 billion). And then it can cost 20 billion kronor (USD 2.3 billion) to get going. How will this be earned back? No doubt the actors count on many new services that they don't know much about. Look at the sale of Mannesman, where the price per subscriber was 100,000 kronor (USD 12,000). This is as much as the income from an average subscriber over 20 years, and income is not entirely profit. So it's a question of how to get this to pay off during the subscriber's lifetime. What will it cost? What will the subscriber be willing to pay?

Anne: Do you believe that the UMTS actors have considered all this? Or is it based on a "me-too" mentality: that you are afraid of being left hopelessly behind if you don't join in?

Östen: I am afraid they feel that they will miss the train if they don't hop on now. They dare not forgo an exponential development. But in the end, there is only a certain amount of money. And that amount depends on how much use one has of a service. There is certainly much hidden in the fog. What has occurred in recent years has convinced me that within one year things will have happened that I don't even think about today. You don't know what they are. It was that way with the World Wide Web. In 1993 it wasn't even discussed. In 1994 it existed. Last year, we did not discuss local phone rates covering the entire nation. Suddenly, it's there, for example, on broadband.

Anne: Apropos that which is hidden in the fog: We technicians often project a picture of the future based on the best technology. We forget the strength of the market forces and that people usually take a long time to adopt new technologies that require certain behavior. But certainly one must try to look into the future.

Östen: Yes, one must do so. There have been many grand forecasts about the future that have not materialized. But even if 20 percent do succeed, that's pretty good. If two of ten visions are fulfilled, they will be good and well pay for the eight that were wrong.

Anne: Just because it's difficult to predict the future doesn't mean you should simply wait and do nothing. What happens, happens, but one should at least try to form the future. My vision, what I really would like to see, is that we speak less of technology and more about the real use that people have for what we develop. I often start with myself. What would I like to have? How do I want to live? Even if every individual is unique, they still have much in common. I would like to have a larger degree of freedom in how I live

my life, and a greater control over my time. It's not easy to describe this process of trying to look into the future. It is a synthesis of earlier experience that you gather together. It's intuition and conscious analysis.

Östen: Don't mix the creative and the analytical processes. When we start a project, there has almost always been many technical problems that have not been solved. Nevertheless, I have always asked – and I am quite technical minded – I have always asked: If this succeeds, how will it be of use to anyone? If that could be answered, the project would be approved even if there were a lot of technical questions.

Anne: They can be solved. It's only technology ...

Östen: The technical solutions were secondary. We took a chance. Or we had also figured on something happening and that we would use the developments. If you've been at it a while, you have an intuitive feeling for what's coming – and you dare take risks. Had we been cautious and believed in what industry had when we developed NMT we would have lost five years. In 1981, when the system was put into operation, we would have been at the technical level of 1976. But we were at the 1981 level, and had moved ahead of the Japanese and Americans. You have to do such things. You can't allow yourself to be limited because there are no technical solutions at the moment.

Anne: This is very stimulating for people who like to tackle problems that have not been previously solved. There are two things that spur you on. One is the problem itself. The other is that we advance our knowledge and this is something really good.

Östen: Yes, this provides enormous motivation.

Anne: One can not only build visions on existing pieces of a puzzle. One must dare to take chances.

Östen: If one dares be a little wild ... In the academic world, you must work very precisely and rigidly to retain your honor. But when you develop new products you need not be so rigid. Then, intuition, based on knowledge, is the prime decision method. You combine this with what you have, the experience you have, and perhaps a lot of other things as well. They are weighed together.

I rely a lot on intuition. I agree with Ingmar Bergman: I don't compromise with my intuition.

Anne: What makes me dare trust my intuition are the times that I did not do it and acted just the opposite, and always regretted it. I knew inside of me I was right, so why did I let myself be influenced?

Östen: I strongly oppose mixing the creative and analytical processes. It is not difficult to analyze and penny-pinch every idea to death. It's better to get going. You win a lot of time. If you don't get anywhere after a half-year, you can pull out and it hasn't cost so very much. And if it works, you've won a half-year in time.

I can understand that you have to make estimates if you build a house. But you cannot do so in research and development work. You can't apply normal calculations.

Anne: When I studied for my PhD, I wanted to start a project with doped fiber with the support of Televerket and Ericsson. It was 1986. But they didn't want to; they did not believe in it. They thought everything had been done already. At Bell Labs, however, I got to carry out the project. Today, it's a billion kronor industry.

Östen: The American Patent Office chief believed the office could close down back in 1900, since everything had been invented.

Anne: And the first article on the laser was refused ...

Östen: When I grew up, I was wildly interested in electricity – to the great horror of my mother. She often would get no farther than outside the door before I had connected up some gadget. And, of course, there was a short circuit. There were a lot of other things I tested. Once I got chemicals to develop film in the cellar. I spilled almost all of it. But I had taken out the film. So I took a little extra water and mixed it with the remaining drops. It worked. You shouldn't give up. And I have no difficulty whatsoever to turn 180 degrees when I see that something is wrong. But it's very difficult for me to turn around just because someone else thinks I am wrong – if I don't understand the reason for turning.

Anne: I am just the same. I even think it's fun when someone opposes me. It's stimulating since I can learn something.

Östen: This is good. If you are wrong, it's only worse. Just more that you defend something that doesn't work, the more you dig yourself in. It's better to reverse yourself and claim the opposite.

Those times when you are successful, the gains are enormous. It's not a question of winning 10 or 20 percent, but a lot of times ... I recall when we developed mobile phones and I used new technology. With the technology's new functionality, we could earn back the investment in a week. This wasn't at all unusual.

Anne: Many have been blinded by speed. They think that an investment that returns only 50 percent in a year is a failure. This is totally absurd.

Östen: Some believe a mountain of gold lies ahead. Everyone wants a piece of it. But I don't believe that greed drives the actors. They are driven more by the fascination of what they do. □

Ann-Marie Åsheden
krusenberg@swipnet.se