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5G is almost here.
At Ericsson, it is Chief
Strategy Officer **Niklas Heuvel****dop's**
job to ensure the Swedish company is an
inseparable part of the evolution.

BY JOE GUINTO

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The next generation is about to change the world.

Fifth generation (5G) wireless technology will be significantly faster, less expensive, more flexible, more secure and more stable than anything the world has seen. It will serve as the backbone for the next wave of connectivity, enabling ubiquitous adoption of numerous new technologies, including self-driving cars, the internet of things (IoT), autonomous drones and artificial intelligence.

Global network and telecommunications giant Ericsson knows what is coming—and it is determined to be a central player in the 5G ecosystem that emerges. The Swedish firm wants to fuel change—it projects more than 550 million 5G subscriptions globally by 2022—by driving how organizations across all sectors advance their business with 5G. That means



**550
million**

The number of global 5G subscriptions projected by 2022

**\$1.2
trillion**

The value of the 5G-connected global market by 2026

Source: Ericsson

ISTOCKPHOTO

moving beyond just building a platform that will enable a speedier wireless network. Instead, the company is working with other leading telecom companies and network service providers to build the new products, technologies, software and services that will use the platform, says Niklas Heuvel dop, chief strategy officer, senior vice president of technology and emerging business, Ericsson, Stockholm. It is a more holistic approach than the company has taken to past technological advancements.

“We’re trying to get in front of the technology,” says Mr. Heuvel dop. “So we’re spending a lot more time on the applied technology than we have in the past. We’re asking: ‘What kind of requirements do we need to support so that other companies can make the most of 5G?’ We want to know what value 5G is going to create and who it will create value for and how we can monetize that.”

Bringing that strategy to fruition, however, means the 141-year-old company has to break down some internal barriers to collaboration and overhaul the way it innovates.

“We’re maybe not world famous for the way we work with developer partners,” he says. “But, this time around, we’re working to develop expertise with the industries of many of our non-traditional customers. Our expectation is that when we go commercial within the next two years, we’ll have a really good idea of what we’re going to need to do to support the network and our partners to really make 5G take off.”

Converge and Collaborate

To get employees thinking about that future and how Ericsson’s core platform could be applied to various tech products and services—and address the varying needs of so many

“We think 5G will change everything.”

—Niklas Heuvel dop, chief strategy officer, senior vice president of technology and emerging business, Ericsson

customers—Ericsson felt it required a specific unit where new ideas could be cultivated. Mr. Heuvel dop leads the unit, called Technology & Emerging Business. The goal was to bring together disparate parts of the company—including corporate strategy and technology, research, business innovation, mergers and acquisitions, IT and emerging business—to work together for the 5G cause. The unit is basically a small, autonomous innovation and development company within the larger organization.

“Our research teams have a long-standing history of being engaged with customers in proof-of-concept experiments that show the technology can work,” Mr. Heuvel dop says. “But it hasn’t been their mandate to stand up and demonstrate actual, viable products. But with the business innovation- and IoT-focused units, we’re now able to support and match the more interesting ideas that come out of research with good business development.”

Forming the new unit meant merging a number of large, independent groups with strong subcultures, very different capabilities and for some, no previous experience with broad collaborations. Not everyone was excited, however, about the new venture. Some groups, for example, did not value input from others, while others were used to a formal, structured approach to business.

To bridge those internal cultural chasms, Mr. Heuvel dop and his expanded leadership team spent countless hours together getting to know each other and looking for common ground with their individual styles. They also brought all of the employees from across the different, merged business units into “intense gatherings” aimed at explaining the combined potential of the new Technology & Emerging Business unit, while also accepting the differences among the merged entities.

“We know that we have to embrace ‘different,’ because we still need our different groups to operate with different horizons and to specialize in different areas of expertise,” he says. “But we also need them to see and experience the value of collaborating around certain innovation projects. That’s why we are very focused on showcasing quick wins, to highlight examples of behaviors we want to encourage. I still spend significant time in informal breakfast and lunch meetings with employees representing our different groups to discuss the issues and opportunities in intensifying our cross-unit collaboration.”

Start Small and Build

Ericsson projects the total 5G-enabled market to be worth more than \$1.2 trillion by 2026. One area where the company expects 5G to have a major impact is in connected health care and potentially remote surgery. Currently, network technology limits the medical procedures that can be done remotely, but the higher speeds of 5G networks will end the perceptible lag time between when a surgeon in one part of the world moves his or her hand and when the robot on the other end receives and processes the request. To that end, Ericsson has partnered with King’s College London to develop a proof of concept adding haptic technology to its 5G capabilities via a glove that surgeons can use to “feel” and control robotic fingers and equipment during surgeries being conducted thousands of miles away. It remains to be seen if this will become a commercial product, but it is important to showcase the opportunities with 5G, according to Mr. Heuvel dop.

The 5G revolution will open a seemingly endless stream of these investment opportunities. Take IoT. Ericsson predicts that 18 billion IoT devices will be connected by 2022. These devices include everything from electric meters and fitness watches to connected cars and



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radio frequency identification tags that can track objects like luggage. And some 27 billion machine-to-machine connections are expected by 2024, according to Machina Research.

“Within our business innovation teams, we’re looking to run use cases until we have a critical mass in the marketplace and can scale up,” Mr. Heuvel dop says.

So he must be cautious about where he and his unit ventures. His team embarks on a process of “advanced discovery” before launching any project or partnership. They collaborate with various academics to study market trends, monitor what leading competitors are doing and study venture capital (VC) firms to see what elements of 5G they are investing in. “All of that gives us a good view of what aspects of advanced technology are going to get the most attention,” Mr. Heuvel dop says. “From there, we can apply the same approach a VC firm might. We decide what ideas to fund, what operating models to invest in.”

But even when the unit decides to make an investment in a particular project or partnership, Mr. Heuvel dop says they do not immediately go

big. Instead, the team aims to create products and services on a limited scale (so-called minimum viable products)—such as the remotely controlled mining excavator it’s piloting with Swedish companies Boliden and Volvo Construction Equipment—that Ericsson can someday reapply to other industrial uses and sell together with operators worldwide. By conducting smaller experiments and creating specific solutions for individual customers, Mr. Heuvel dop and his team are able to measure the success of these efforts and move the winning ideas into larger business areas. The idea, as Mr. Heuvel dop puts it, is “to nurture and resource innovation projects correctly [and] keep them from being quickly drowned in the core business.” This approach also keeps Mr. Heuvel dop’s team from spending big on an innovation that turns out to be a bust.

Fail Fast, Move On

The company has struggled with making costly misplaced bets in the past, and Mr. Heuvel dop knew it had to do better with 5G. “Historically with our research and business development units, we’d have funding cycles, come up with innovations and run with the ideas no

“It is a natural part of innovation that we have failure. We’ve built that into our DNA.”

—Niklas Heuvel dop



Partnerships for a New Generation

To drive the fifth generation (5G) wireless technology revolution, Ericsson has formed nearly two-dozen partnerships with companies across various sectors. They include Sweden-based Scania, a member of Volkswagen Group, with which Ericsson is working to apply 5G to autonomous vehicles, and Switzerland-based ABB Group, with which Ericsson is working on highly networked industrial robots.

Ericsson's explorations include everything from manufacturing to wind turbines. At Mobile World Congress 2017 in Barcelona, Spain, for example, Ericsson partnered with China Mobile to develop a 5G-enabled smart factory prototype. "If you set up a manufacturing plant in the future using robots, you can create a highly flexible and configurable environment," says Niklas Heuvel dop, chief strategy officer and senior vice president of technology and emerging business, Ericsson. "With robust wireless technology that has low latency and the high mission-critical reliability that 5G offers, we will see very adaptable factory floors where robots change tasks at a moment's notice."

Earlier this year, Ericsson also showcased a \$25 drone running on a 5G network and driven by a guidance system based in the cloud to inspect a sample wind turbine—an industry which the *Global Wind Turbine Inspection Drones Market 2017-2021* report says will see a 13 percent increase in compound annual growth rate between 2017 and 2021. "It behaved more like a \$2,500 drone in the movements it was able to make in real time," says Mr. Heuvel dop. "That's what we'll see more of: 5G and cloud-computing enabled devices performing the tasks of more expensive machines. When you apply that kind of potential to things like autonomous cars, you have a very exciting future."

matter what," he says. "But that's not the most efficient use of our capital. We knew we needed to be more diligent about how we invest on a large scale. We want to make sure the right ideas get resourced and accelerated. But perhaps more important, we want to make sure that the ideas less likely to succeed, or those that aren't going to be of value, get killed early in the process and don't distract us."

One recent 5G project that failed was a platform that would have delivered augmented reality tools aimed at transforming the typical in-store shopping experience. But after undertaking a review of the project—something Mr. Heuvel dop's group continually does with new endeavors—his team decided to shelve it. "The platform was outside our strategic focus areas, and our ability for monetization of that platform was too limited," he says.

Leaders often have to make those kinds of difficult decisions when the business case for a new project cannot be made. They also, then, have to explain to people who have invested their time and effort into something why it is not going to work.

"This is a difficult process," Mr. Heuvel dop

says. "It should be difficult. We have to accept that, because if we have the right people they are going to be passionate about their ideas. And I'd be lying if I tell you that after we make the decision to kill something some people aren't going to continue to drive it forward or even work on it on the side. We know that happens."

For Mr. Heuvel dop, a big part of meeting this challenge is building a culture that sees failure as a necessary and healthy part of the innovation process. "We make sure that our people know ultimate success is not dependent on every project succeeding," he says. He has helped his team become comfortable with the idea that just 3 in 10 projects are really going to succeed. "It is a natural part of innovation that we have failure. We've built that into our DNA."

The journey to a 5G world will not be linear—there will be setbacks and sidetracks. But Mr. Heuvel dop is confident Ericsson has the right strategy and risk appetite to help build the future. What is on the horizon is nothing less than a paradigm shift, he says.

"We think 5G will change everything. The performance, reliability and security will fundamentally change the way business is done." **IQ**