

A digital path to sustainability

April 25, 2022 | Podcast

By Katy George

Sustainability and productivity needn't be at odds when enabled by Fourth Industrial Revolution technologies. And with an empowered workforce leading the way, outsize gains can be the result.

DOWNLOADS

[↓ Article \(8 pages\)](#)

In this edition of the [McKinsey Talks Operations](#) podcast, host Daphne Luchtenberg brings you highlights from a panel discussion on how to achieve sustainability targets through activating Fourth Industrial Revolution (4IR) technologies. The discussion took place recently as part of Lighthouses Live, the flagship event of the Global Lighthouse Network—a World Economic Forum (WEF) initiative in collaboration with McKinsey.

The conversation was led by Katy George, a senior partner at McKinsey. It features Christine Bastian, executive vice president and chief people officer of Western Digital; Kathy Wengel, executive vice president and chief global supply chain officer of Johnson & Johnson; and Åsa Tamsons, senior vice president and head of business area technologies and new businesses at Ericsson. The following is an edited version of their conversation.

Daphne Luchtenberg: Your company's future success demands agile, flexible, and resilient operations. I'm your host, Daphne Luchtenberg, and you're listening to *McKinsey Talks Operations*, a podcast where the world's C-suite leaders and McKinsey experts cut through the noise and uncover how to create a new operational reality.

In the current geopolitical context, local manufacturing and supply chain resilience are becoming increasingly important. At the same time, organizations face an imperative to tackle environmental sustainability, strengthen operations, and have a positive impact on people and the planet. That's where the Global Lighthouse Network comes in.

The Global Lighthouse Network is a World Economic Forum initiative in collaboration with McKinsey, and it has inspired a recent playbook to address these challenges. At the Lighthouses Live event in April, we were delighted to convene a group of leaders to talk about how their organizations are scaling responsible growth through tech-enabled operations, which they are using to power sustainability and workforce engagement. McKinsey senior partner Katy George led the discussion. Let's listen in.

Katy George: I'm very excited to be joined by three leaders of companies that have been recognized not only as "digital lighthouses" but as "sustainability lighthouses": companies that have demonstrated fantastic results on improving the environmental sustainability of their operations while also achieving fantastic breakthrough performance in other dimensions. They are showing us what is possible in terms of delivering not only great economic results but also great environmental results.

They also have really been innovating the way they work with and through their workforces to deliver these breakthrough results. These are companies that have invested in upskilling and are engaging their front lines in ways that have unleashed fantastic innovation and creativity, empowering their front lines to do things that they've never done before.

They have also done things at scale. Each of these companies has been able to demonstrate not only that they can pilot new technologies, but that they have truly transformed their way of working in order to create sustained outcomes. So with that, I

am delighted to be joined by three leaders: Christine Bastian, who is the executive vice president and chief people officer of Western Digital; Kathy Wengel, the executive vice president and chief global supply chain officer of Johnson & Johnson; and Åsa Tamsons, senior vice president and head of business area technologies and new businesses at Ericsson. Thank you all very much for joining me.

Christine, let me start with you. Congratulations on your [site's] recent recognition as a lighthouse. I know that your Penang [Malaysia] site has experienced very significant volume growth four times in the last five years. But you've done that while maintaining and achieving your sustainability pledge. Can you tell us a little bit about how your Fourth Industrial Revolution technology applications have allowed you to do that?

Christine Bastian: Katy, thank you. At Western Digital, we recognize the importance of doing our part to contain global temperature rise. So it was important to pledge and set our ambitious goal to help limit the increase to less than 1.5°C by 2030. While we've made significant improvements the past few years, we have a lot of work to do to achieve our goal. It is particularly challenging to achieve the goal while the factory is going through expansion. So that's why we rely on 4IR technologies to drive eco-efficiency.

“4IR technologies have helped boost our operations’ productivity and efficiency. This increased our operational performance to support the growth without the need to add more resources or machines that consume more energy.”

— Christine Bastian

4IR technologies have helped boost our operations’ productivity and efficiency. This increased our operational performance to support the growth without the need to add more resources or machines that consume more energy. Ninety percent of the greenhouse-gas emissions we create come from electricity. So we deployed more than 1,000 Industrial IoT [Internet of Things] sensors to more than 500 pieces of equipment and 15 utilities systems to gather data and generate analytics insights. This allows us to optimize energy consumption across the entire factory. This is how 4IR technology accelerates sustainability for Western Digital.

Katy George: Kathy, I know that you at Johnson & Johnson are also working toward a sustainability pledge, and Janssen's Cork [Ireland] site has implemented adaptive process controls and reduced carbon emissions per kilogram of product by 56 percent, which is just fantastic. I know that meeting your growing business demands at the same time as working toward your sustainability goals is very challenging. How have you done that? What is your strategy?

Kathy Wengel: Thank you, Katy. It's great to be here with everyone. Our strategy hinges on three approaches: accountability, digital, and partnerships. First, it's about setting bold climate commitments that demonstrate our accountability to making science-based progress. For more than three decades, we've been setting publicly facing environmental goals. And we continue to commit to bold goals, including the intention to source 100 percent of our global electricity needs from renewable sources by 2025 and to be carbon neutral in our global operations by 2030.

Along with that, we're harnessing digital and Industry 4.0 advanced-manufacturing technologies to reduce our carbon footprint and, to your earlier point, drive greater resilience. So we're just so proud of our team for receiving our first WEF sustainability designation for our lighthouse in Cork, Ireland.

Our Cork site has really been a model in our global supply chain of how to reduce that environmental footprint by using 4IR technologies, whether it's the physical wind turbine that was installed there or having power-purchase agreements with local wind farms in Ireland. We then used that adaptive advanced process control and digital-twin technologies to optimize the performance not only in manufacturing but of our chillers, our pumps, our cooling towers. Those are some of the biggest energy users on the site and have a really important impact on plant reliability and cost.

Now that we have scaled those, we've rolled that out to 16 of our sites. We look at our Cork site as one of our leaders in the sustainability journey and that intersection of better performance and a better outcome for the planet.

Katy George: That's great, Kathy. Thank you very much.

Åsa, your Lewisville [Texas] site has actually built sustainability into the very design of the building and the site itself, including the heating, ventilation, and air-conditioning systems, which are controlled smartly, and you've reduced energy consumption by 24 percent. Can you talk about Ericsson's approach and how this helps you toward your sustainability goals.

Åsa Tamsons: First of all, it's great to be here. Just as Christine and Kathy mentioned, we all care about how we can contribute and do our share of meeting sustainability goals. That means that we need to think differently. We need to consume differently. And we need the latest technologies to realize that, so that's one piece of it. The other part is we are a technology company. We also feel, you could say, an obligation to be an example for other companies on what you can do if implemented right.

There are two parts for us. It really comes back to our mission: creating connection that makes the imaginable possible. And we'd really like to do that by using limitless connectivity to improve people's lives, redefine business, and create a more sustainable future. It's not only about bringing in the latest technologies. It is showing what you can do if you use design thinking, bring the best people together, and apply the best technologies.

We are also back to using 100 percent renewable sources, reusing rainwater to reduce the water usage, and building the site with reusable, recyclable materials. A lot of technological leadership is not only about 5G, which we love to talk about, or all of the smart AI applications, it's also about the development happening on the material side and on the design side. That's what's exciting.

Why is this important for Ericsson? We need to change our supply chain and the way we produce our products, so this way we can reduce our energy efficiency, our water usage, while managing to get closer to the customer we serve. We're able to deliver better products faster to the customer, while actually reducing the airborne part of our supply chain from 30 percent to 10 percent.

And that becomes a blueprint within Ericsson. So how can we now replicate this across our production system, as well as be a great example to all our technology partners, all our customers, and all enterprises who want to do a similar journey, of how you can make this happen?

Katy George: That's great. Åsa, I think you just captured the essence of what the Lighthouse Network is trying to do in terms of inspiring both within your own companies and outside. Thank you for that. And you mentioned something else that I wanted to shift to, which is this notion that it's not just about technology, it's also about people.

One of the things that I think we've found is that all of your companies have really put workforce and people in the center of your deployment and your approaches. That's a bit counter to some of the popular press about how automation and digital technologies are going to somehow disempower the workforce or even put them out of work.

"I think it's a diverse and inclusive workforce that drives innovation. It drives innovation that's reflective of the stakeholders and the communities we serve."

— Kathy Wengel

What we've seen from your companies and the others is really innovative upskilling programs, whole academies, new types of apprenticeship. We've also seen this notion of ideation hubs to promote innovation in different ways. And then we've also seen wholesale organizational restructuring to unleash new workforce capabilities and realign the workforce to the agile approach and the end-to-end value chain approach that you're all using in the 4IR applications.

So I'd like to ask each of you to comment a bit on what you're doing from a workforce perspective. Kathy, I'll start with you and Johnson & Johnson. I know when your site was designated a lighthouse back in 2018, which feels like quite a long time ago, one of the things that was highlighted was the in-house technical capabilities and the knowledge

development that you were pursuing. I would love to know how that has worked for you. How have you evolved? What have you learned over the last several years? What is your workforce strategy going forward?

Kathy Wengel: Thank you, Katy. To your point about why we came together as lighthouses and why J&J wanted to be a pioneer there was that we disagreed with the premise that the Fourth Industrial Revolution was going to move around our employees, versus having them be at the heart of everything we do.

Being a company that's been here for more than 135 years, our amazing talent in our plants and around the company have had to go through multiple industrial revolutions. We know how important it is to keep our employees at the center of this. And to your question about the last three years, if anything it's put an even greater emphasis on upskilling our employees in areas like digital, and in areas about how that intersects with risk management and resilience and supporting the mental and the physical well-being of our on-site superheroes, advancing diversity and inclusion.

Because all of those things really come together. Åsa mentioned design thinking. It's really about, how do you design your workforce for the capabilities you need for the future? When we look at those opportunities, I think it's a diverse and inclusive workforce that drives innovation. It drives innovation that's reflective of the stakeholders and the communities we serve. A workforce [with digital skills] at all levels acts with much more agility and it enables us to build partnerships and capabilities that drive scale across a global network, not only inside our company but with many, many more partners.

Then, I'd say we're really amplifying efforts to attract and retain a more diverse and inclusive workforce, as well as development programs we've put in place across our corporation on resilience and digitally adept talent. We have specific focus areas, including our Women in STEM²D program. And that *D*, by the way, is about design thinking that goes into everything we do in science, technology, engineering, math, and manufacturing. It's about upskilling by using Industry 4.0 tools, all the way out to mental-

health resilience. We really see that it comes together in our commitment to our team members to upskill them, and that sparks their innovation in how we keep our company at the forefront of everything we do.

Katy George: You talk about the connection between workforce investment and innovation and agility. I know, Christine, that that has been really central to your work at Western Digital as well. The Penang site joined the Global Lighthouse Network only in 2021, so a bit more recently.

One of the things that you have done there is to create an agile digital studio, which really drives ideation and innovation in a very participative way. Can you talk a little bit about that and particularly what you've learned during the pandemic, because, as Kathy mentioned, that has added a new layer of complexity, but potentially also acceleration, to our efforts.

Christine Bastian: That's right, Katy, and thank you for the question because it's really important. Similar to Kathy's point, people are at the forefront when we think about innovation. At Western Digital, we pride ourselves on being at the forefront of game-changing innovations. From the invention of the first hard disk drive to the recent advancements in 3-D NAND [flash memory technology], we're constantly pushing the technology and the innovation boundaries to turn the impossible to possible, and it's 4IR that is about connectedness.

When we think about connecting our people with this purpose of innovation, which is the key in keeping our workforce passionately engaged both in the upscaling and in being future ready. To embrace that passion, we created the agile digital studio for our people to continue to collaborate and innovate. Prior to the pandemic, we were doing this in person. But during the pandemic, what we were able to rely upon was to introduce technologies like VR [virtual reality], AR [augmented reality], and collaboration platforms to keep people connected and collaborating and innovating. The result was great, because across the board we increased invention disclosures during the pandemic as compared to before.

Katy George: The work that all of your teams have done during the pandemic, as Kathy said, really is heroic and has taught us what is possible.

Åsa, we'd love to hear a bit about what you have done. I know that one of the things that stood out for us in the Lewisville site was the way that you went after a kind of multipronged approach to upskilling your workforce, including using a virtual-reality platform, as well as collaborating with local universities. Can you tell us a bit about that? Also, how important is it to bring the workforce along? Couldn't you just do this by deploying technology?

Åsa Tamsons: I promised myself I wouldn't make this all about 5G. As you mentioned it, we have education that is driven by virtual reality, augmented reality, and XR [extended reality]. I think that's one of the most exciting use cases I see for 5G going forward, and it's not only for upskilling or reskilling. It's about onboarding new people into your team.

We use [these technologies] to faster upskill our teams and learn as we design new processes, new production flows, with new methodologies and new technologies, which I think is exciting, and it comes back to you have to upskill and reskill both into new processes but also maybe new technologies, new ways of working.

“Putting together that cross-functional team from the beginning, when you start to launch new ways of working, was fundamental to us. It's part of the definition of how we think about agile ways of working.”

— Åsa Tamsons

The other part, that I think both Kathy and Christine touched upon, is that it's not only about reskilling and upskilling. It's as much about how you work together. Working with our sourcing supply chain, what we've learned is that typically workers are engaged in different phases along the journey, and then [scaling technologies] doesn't work.

Putting together that cross-functional team from the beginning, when you start to launch new ways of working, was fundamental to us. It's part of the definition of how we think about agile ways of working. But it's also about bringing the multidisciplinary skills into

your team. And that requires a new type of leadership and a new type of working. And, of course, that also expands to our partners. Because we're not delivering this in isolation. We are working with our tech partners and all our regular suppliers.

And then the final note that I really want to touch upon is that, are people in the center of this transformation? [Our people] realized they [were in the center] and got even more empowered. Because they became the champions. We would not have been able to decide on workflows if they had been designed without them. So by making this happen, they actually became the heroes.

Katy George: I love the optimism that all three of you bring to the future of manufacturing and operations, and the future of work and being able to create wonderful experiences and really meaningful jobs for people.

I'm going to switch to one last question, which is a speed round. I'm going to ask each of you for one- or two-word answers to what being part of the Global Lighthouse Network really means to you and your company. So let me start with you, Åsa. What word or two would you use?

Åsa Tamsons: Inspiring and connectedness.

Katy George: That's fantastic. Christine, how about you?

Christine Bastian: Alignment on common ground.

Katy George: Wow. Not easy to come by. That's great. Kathy?

Kathy Wengel: Stronger together.

Katy George: Thank you all for this really inspiring conversation. Each of your companies has been recognized as sustainability lighthouses and truly are showing us the way to achieve real breakthroughs on sustainability in ways that we have never seen before. And each of you in your companies is also showing us the magic of investing in our workforces and unleashing the power that they bring in innovation and performance.

Daphne Luchtenberg: That was such an insightful discussion. So great to hear real stories from companies that are boosting productivity and sustainability and doing it all with an empowered workforce. The Global Lighthouse Network now numbers over 100 sites across sectors and geographies, all leading the way in harnessing the potential of the Fourth Industrial Revolution. To find out more about joining this network of leading innovators, please visit McKinsey.com/GLN.

You've been listening to *McKinsey Talks Operations* with me, Daphne Luchtenberg. If you like what you've heard, subscribe to our show on Apple Podcasts, Spotify, or wherever you get your podcasts. We'll be back with a brand-new episode in a couple of weeks.

ABOUT THE AUTHOR(S)

Christine Bastian is executive vice president and chief people officer of Western Digital. **Kathy Wengel** is executive vice president and chief global supply chain officer of Johnson & Johnson. **Åsa Tamsons** is senior vice president and head of business area technologies and new businesses at Ericsson. **Katy George** is a senior partner in McKinsey's New Jersey office, and **Daphne Luchtenberg** is a director of reach and relevance in the London office.

[Talk to us](#)

EXPLORE A CAREER WITH US

[Search Openings](#)

