Lotta Ljungqvist – President & CEO, GE Healthcare Nordics & CEO, Testa Center, Sweden



To run a global business from a small country like Sweden, you need to have a global mindset from day one and be responsive to your customer needs globally

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With chromatography having been invented in Uppsala, Sweden, it makes sense for GE Healthcare's Life Science business to have its largest global manufacturing and R&D operations there. GE Healthcare Nordics President and CEO Lotta Ljungqvist gives an overview of the firm's global portfolio and highlights the importance of Swedish operations for supplying a majority of the worldwide demand for chromatography resins. She gives insights into the impact of the business unit being acquired by Danaher and underlines how the affiliate is driving local innovation through its newly inaugurated Testa Center.

Can you give an overview of the Life Sciences business within the GE Healthcare conglomerate?

Our main business which is part of GE Healthcare Life Sciences comprises three main parts. Firstly, bioprocess products and solutions to increase the capability for cell and protein investigation, drug discovery, and large-scale manufacturing of biopharmaceuticals. The cell and gene therapy area is our second business unit which is focused on tools, technologies, and processes to enable researchers and pharma companies to bring new therapies into widespread clinical use. We have been supporting this particular part of the industry during the last ten years. Lastly, we also do genomics and cellular research to provide technologies used by academia, biotech, and

pharmaceutical companies to accelerate research that brings us closer to therapies and cures for disease.

Overall, we have been 60 years in this industry, and we have been there since the early beginnings, essentially since the invention of chromatography here in Uppsala. Our product Sephadex, which celebrates its 60th anniversary, is used to purify proteins, vaccines and therapeutic biomolecules until today.

Ever since, we have supported the growth of the industry, ensuring the quality and supply of our products at all times – a fact which we are very proud of. We are not producing biopharmaceuticals but being able to supply key manufacturing components even in difficult circumstances is vitally important to our customers, who produce the drugs that many people around the world rely on. The production for Insulin, for example, relies heavily on our chromatography resins.

What other services do you offer from a GE Healthcare perspective?

To support our customers, we also have end-to-end solutions such as FlexFactory, which is a bioprocess platform using predominantly single-use technology. It comprises distinct unit operations connected via single-use tubing sets and can include a variety of automation schemes. FlexFactory offers faster deployment, multi-product processing, and accelerated production with flexible, scalable processes. Additionally, KUBio is a fast, prefabricated modular facility offering both GMP-compliant housing and facilities together with a FlexFactory bioprocessing platform. Building your own manufacturing facility is usually very costly and takes between three to five years and also comes with a certain risk as well. The aforementioned solutions are essentially a factory in a box, which can be constructed in 18 months and on this way cutting the risk for our customers. It has been received very well, with currently four KUBio facilities up and running and 63 FlexFactory being installed as of yet.

What does the GE Healthcare Life Sciences global footprint look like?

The biopharma business of GE has around 6500 employees across the globe, with Sweden, UK, China, and the US being our main hubs. We have 15 manufacturing sites, as well as 12 research centres. The biopharmaceutical market is fast-growing, with eight of the ten top-selling drugs globally already being biopharmaceuticals. There is also the need for supporting the global reach of these products, as there are many markets which are not fully served with biopharmaceuticals

today. We also interact with the whole ecosystem, from researchers and start-ups all the way to patients, particularly as these new therapies require all stakeholders to work closer together.

How important is Sweden for your operations?

In Sweden, we have two larger sites, one in Umea, which provides equipment manufacturing, and then our main site here in Uppsala, focused on chemical manufacturing and R&D. GE Healthcare's Uppsala facility is one of the world's biggest factories for chromatography resins and produces some 270 different types of chromatography resins, which are used in the purification of more than 90 percent of all biopharmaceuticals approved by the FDA. Our site makes up for one percent of Sweden's total exports and up to USD 70 Million are invested annually between 2017 and 2022 in production extension. GE Healthcare has over 1650 employees here in Sweden and boasts one of the largest teams for GE Life Sciences globally.

Why is Sweden such an important hub for the group?

The reason for the great importance of the Swedish operations for the GE Life Sciences group globally is partly based on the history of the technology being invented here in close collaboration with Uppsala University. However, it is also about how we develop the competences and remain competitive as there is always competition between sites worldwide. Sweden is a collaborative country and we leverage the competences of local research projects that are ongoing here, with the Testa centre being one of them. To run a global business from a small country like Sweden, you need to have a global mindset from day one and be responsive to your customer needs globally, as the domestic market is too small. Our bioprocess business serves all biopharma companies across the globe, with all of GE Healthcare Life Science's chromatography resins coming from Uppsala.

In February 2019, Danaher has acquired the GE Healthcare Life Sciences segment for USD 21 Billion. More than half a year after the announcement, do you have any details on how the deal will affect the future of the Swedish operations and its stakeholders?

The operations in Sweden will not be affected at all, as we will continue manufacturing as before just under new ownership. The deal with Danaher is expected to close during the last quarter of this year, so we are in the middle of preparations, in terms of carving out the business. This

includes service agreements that our current owner will continue to support until we have everything up and running independently. Meanwhile, we are working hard that our day-to-day business is not affected and that we will continue to supply our high-quality products to the customers. Danaher is more of a “portfolio ownership”, so we will have a certain freedom when it comes to future collaborations.

You are also the CEO of Testa Center, a dedicated facility to advancing bioprocess development in collaboration with the Swedish government. How is the centre helping to bridge the gap between small biotechs and large pharma and life sciences players in Uppsala?

The Testa Center is an investment into innovation and understanding our customers, funded by GE Healthcare and the Swedish Ministry of Enterprise. From our perspective, we want to learn about future technology needs and the players that are driving new technology are start-ups and academics, which we want to collaborate with. The centre is a 27,000 square-foot bioprocess pilot-scale facility opened in August 2018. Serving as a hub for innovation in biomanufacturing, the facility includes four upstream and downstream bioprocessing laboratories where researchers can test and evaluate their technical and biological discoveries while keeping the full ownership of their results and intellectual property. The labs can be used by start-ups to test and evaluate new technology and to scale up their manufacturing processes, as well as for educational purposes. It is a non-profit, separate legal entity, where start-ups can access equipment and book spaces, paying the actual costs for these services. It is a great public-partnership and really an example of a sharing economy.

Was it easy to convince the authorities to participate in funding this venture?

It is never easy to ask for investment, but the convincing story was the shared benefit of chipping in funding from both sides. The government is willing to support the growth of the life sciences industry, as they understand the importance of this sector. Innovation is the foundation of the future and that is the mindset both parties have.

How do you select start-ups and companies for the centre?

The selection has been outsourced to a local group called Uppsala Bio, so GE Healthcare has no influence on the selection process, although we have to give the final approval. As an example, Uppsala-based start-up company Ilya Pharma was among the very first customers to run their project at Testa Center and to use its bioprocess equipment. They are starting clinical trials soon and used the centre to scale up and understand their manufacturing processes before outsourcing it, to reduce the risk. Additionally, they were able to secure more funding due to encouraging test results here at the centre.

We also have a focus on educational programs, hosting the first class of last-year students on the Master of Science programmed in Molecular Biotechnology Engineering at Uppsala University at Testa Center for a student lab exercise. By locating parts of the training at Testa Center the students will gain important experience in industrial processes that cannot be offered in the university's own laboratories. Through the experiences gained at Testa Center, the university will also be able to develop completely new programs focusing on large-scale production of biologic medical products. In the longer term, this will also contribute to Sweden retaining a leading position in biological processes and the production of biological drugs.

What are your priorities moving forward?

Our priorities are to continue to provide our products to our customers and improve our productivity, as we have a great impact on human health. We want biopharmaceuticals to be developed at a sustainable cost for the community, as it has benefits for individuals and the business. We are investing in the transition of the new ownership and we are confident to see the fruits of our work and to see new investments, so we can continue to provide our high-quality products.

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