

DIGIPLEX ARTICLE 3

**The Heart and Soul of The Fourth Industrial Revolution**

**Nordic data centers are challenging global business to go green and save**

With the world undergoing its fourth industrial revolution, driven by global digitization, the data center is emerging as the fundamental technology—the “steam engine”—of its time.

Klaus Schwab, founder and executive chairman of the World Economic Forum (WEF), has defined the fourth industrial revolution as a global shift emerging from the overlap and integration of a raft of new technologies, from wearables to 3D printing, the Internet of Things (IoT), blockchain and biotechnologies.

“The challenge during any revolution is understanding what’s driving it and where it’s headed” says Byrne Murphy, chairman of DigiPlex, a data-center specialist based in the Nordic region. “As we’re still early in the fourth industrial revolution, it feels like a gold-rush: huge potential is being unearthed every day, often—sadly—without attention to long-term impact.”

Providing secure, reliable storage to house these technologies is a rapidly growing industry. At the highest levels, hyperscale operators are investing incredible amounts in the area. A 2018 report by Synergy Research Group revealed that the capex investment of hyperscale operators reached nearly \$75 billion for 2017, a 19% growth over 2016. Most of this investment, says the report, is for building huge data centers around the world.

Because a strong data-center strategy has become an inescapable requirement for businesses wanting to capitalize on the fourth industrial revolution, decision-makers face increasing pressure to manage both short and long-term costs.

“We estimate that an American company with a reasonably modest deployment of 100 megawatts over 10 years will save approximately \$1 billion by placing their data center in Sweden or Norway, against one the U.K.,” says Mr. Murphy. “That saving is based on the difference in the cost of power alone.”

Cost isn't the only important factor drawing international companies to the Nordics, though.

A crucial distinction in the fourth industrial revolution is a growing recognition of our collective responsibility to mitigate the harm rapid digitization is having on the global environment. “The more we think about how to harness the technology revolution, the more we will have an opportunity to shape the revolution in a manner that improves the state of the world,” Mr. Schwab adds.

Data centers are already responsible for 3% of the world's power consumption. The massive server parks that house and enable the Internet to generate incredible amounts of heat as a byproduct, which is often simply disposed into the atmosphere. While this may echo the increased pollution that accompanied previous industrial revolutions, it need not be the case.

“‘Going green’ is nearly always a cost to a business,” continues Mr. Murphy, but “not with us. We present a dual value: a cost difference so extreme that many, many millions of dollars in savings are possible in the short term. This is in addition to the prospect of helping to ensure that the fourth industrial revolution becomes a sustainable one due to significantly reduced environmental impact over time.”

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DigiPlex data centers are designed for ultimate sustainability, combining renewable energy, efficient cooling systems, and heat recycling, to dramatically reduce environmental impact and serve the local community.

“DigiPlex has developed a way to drastically reduce heat waste in our operation by enabling our Stockholm data center to capture the excess heat from servers that power the Internet and use it to warm up 10,000 homes and offices in the city,” says Mr. Murphy. “The virtuous cycle we’ve created has turned everyday digital activities that start a process in our data centers, like browsing or streaming video, into actions which contribute to heating the district.”

As the fourth industrial revolution encourages the creation of ‘smart cities,’ integrated and beneficial data centers are being recognized by governments and citizens alike. “Utilizing smart technological solutions to make the most of synergies between recovered data-center heat and the city’s heating needs is a part of the environmental objective to become fossil fuel-free by 2040,” says Karin Wanngård, Mayor of the City of Stockholm.

An increasingly digitally and environmentally conscious public is also emerging as a consideration for all businesses. As awareness of the impact of our digital life grows, labeling and regulation that reveals the sourcing and impact of how that data was housed may become a corporate reality.

“Consumers always want choice. Wherever they buy food, clothing or disposable products, they are given ecological or ethical labelling that lets them know the source and impact of their purchases,” says Mr. Murphy. “Should there not be a similar option for digital services whereby you can actively choose to stream your next TV series from a green, highly efficient data center that harvests the excess heat to warm up homes?”



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As the fourth industrial revolution evolves, its impact on business, culture and the planet will only increase. Data centers are the heart of the revolution, but they also have the potential to reflect its soul. The Nordic focus by the largest hyperscale operators reveal their understanding of the short and long-term benefits of operating in the region. The decisions the rest of the world's businesses make today are set to have far-reaching implications for their own and the world's future.