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EVERYTHING HAS CHANGED, AND AI IS READY TO TAKE US ON THE RIDE OF OUR WORKING LIVES

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Trust me, we're in for quite a ride. The stars are perfectly aligned for a profound transformation of our working lives. On the one hand, the pandemic has sparked a desire for rapid change. And on the other, artificial intelligence, wireless connectivity, and edge computing have reached the level of maturity needed for widespread and effective implementation. Everyone accepts that the fast-forward button has already been pressed, but what will our everyday work routines actually look like in three to five years? Let me share my view as it relates to the worlds of logistics and retail.

Acceleration is a key learning from history and for today

When looking forward, there's often value in also looking back, so I'm going to begin with some learnings from history. The 1918–20 influenza pandemic, also known as the Spanish flu in many countries, was the most devastating catastrophe of its kind in modern times. Up to 50 million people around the world died. Yet, it also set the scene for extraordinary societal change during the 1920s and beyond. For example, the decimated workforce impelled more women to seek – and actually be offered – employment. This accelerated the gradual process of gender parity that had begun in the nineteenth century.[1] The pendulum swung in favor of worker power, which accelerated structural changes to improve working practices.[2]

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Then, as now, the key word was acceleration. The way I look at it, we've already arrived at a pivotal moment in the digital transformation of business. The pandemic has proved that those who deployed IT and connectivity innovation were more efficient, adapted more rapidly to market turmoil, and displayed greater resilience to change.

1 Smithsonian Magazine, "How the 1918 flu pandemic helped advance women's rights," March 2018.

2 The Conversation, "The International Labour Organization was founded after the Spanish flu – its past lights the path to a better future of work," June 2020.

The physical and digital convergence drives new workforce needs

The three key strands – AI, connectivity, edge computing – are combining the front, customer-facing business with internal, often hidden IT. Simultaneously, as the use of technologies becomes an increasing part of our everyday lives, the physical and digital worlds are converging. This is creating an evolving communication challenge as there is an increasing imperative for both customer-facing teams and technologists to speak each other's language and understand the work of one another in order to build customer-centric products and solutions. This will spark a need for upskilling people who have well-rounded skills and who can converse fluently across topics as diverse as customer delight, robot path planning, battery life, neural networks, database schema, and hyperscale.

Technology is disrupting work routines and roles in the logistics sector

So, where are we already feeling the effects of this convergence most clearly? In the world of logistics, the boom in ecommerce has been one of the most obvious markers of pandemic-driven acceleration. It is sharpening the focus on everything, from smart locker networks such as DHL Packstation to warehouse automation. Ocado Group – pioneers of the online grocery market – is a case in point. Through the company's Ocado Smart Platform, a unique communication system orchestrates swarms of bots across highly automated warehouses. Such facilities will never be the same again.

> **"Existing IT teams – used to installing Wi-Fi routers and putting everything in the Cloud – will have to become adept in custom-developed radio base stations."**

Practically then, what are the implications for global workforces as AI and robotics continues to combine to transform logistics? Staying with warehouses as an example, changes in working practices need to start early. Even at the planning stage, operational resources will have to be boosted by the introduction of very capable software teams. Existing IT teams – used to installing Wi-Fi routers and putting everything in the Cloud – will have to become adept in custom-developed radio base stations. They'll

also have to deal with increasing edge-computing infrastructure necessary to manage the real-time instructions that need to be calculated and relayed to groups of robots. In this transition, the day-to-day work of IT teams will become broader and more strategic and require continual upskilling on the latest technologies such as AI, robotics, and connectivity.

Warehouse technicians who built their careers maintaining conveyor belts and overseeing industrial programmable logic controllers will have to switch to maintaining highly complex mobile robots with multiple advanced microprocessors and sensors. They will also have to look after ancillary systems such as battery charging stations, safety systems, and robot breakdown and recovery. For warehouse technicians to excel in their new roles, they must be upskilled in technical areas such as AI and automation. They will also benefit from training on managerial and project management skills as their roles become more complex and multifaceted.

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Working practices are also being transformed in last-mile delivery services as many logistics organizations pay increased attention to real-time route planning and automated drones and vehicles, such as the FedEx "same day bot" Roxo. Overseeing autonomous machines will take delivery drivers out of the truck and put them in front of a screen. Initially, there might be multiple people assigned to each delivery robot as development is bedded in and proven to be safe. In time though, each overseer will manage a squad of robots, each making most of its own decisions and only needing human intervention when a problem or the need to quality-assure a delivery arises. Change will ripple through the whole logistics workforce. The depot management team will shift from maintaining diesel vehicles to fleets of electric robots. Operations managers will turn their attention to flight plans, weather patterns, and aviation regulations. The day-to-day work routines of delivery drivers and managers will significantly broaden with this transformation.

"Overseeing autonomous machines will take delivery drivers out of the truck and put them in front of a screen."

The retail sector is experiencing seismic changes in working patterns

The pandemic and our emergency adoption of home working have clearly had a huge impact in retail. For many consumers, the experience of being in a store and the immediacy of purchase will always be attractive. Going forward, success will come to innovators who implement new ways of working to strike a fine balance between the physical and digital experience. Amazon Go is already out of the blocks of course, using advance deep learning, computer vision, and AI to remove checkouts and lines from its frictionless stores. The trend is here to stay – the Lifvs startup in Sweden recently launched a string of unstaffed digital supermarkets in rural areas – and it promises to be a hotbed of disruption over the next few years.

Another good example in this space is IKEA. The global brick-and-mortar retail giant revealed a glimpse into its ambitious digital strategy with the acquisition of Geomagical Labs. The startup had come to prominence with its computer vision, machine learning, and augmented reality technologies. The idea is for consumers to use a smartphone to capture a digital version of their home before redesigning the living spaces with new furniture and accessories. For me, this is perfectly timed. The home-working generation will be creating their own kind of blended living – and demanding flexible spaces and fresh interior propositions to match.

As autonomous shopping proliferates and checkouts disappear, staff will come out from behind their tills to interact with customers as brand ambassadors."

There are clear implications for workers across retail as roles evolve and new skills become necessary. Store staff will need to be able to engage much more deeply with customers on their personal needs, rather than simply advising on stock availability or processing a transaction. As autonomous shopping proliferates and checkouts disappear, staff will come out from behind their tills to interact with customers as brand ambassadors. In grocery, of course, staff are already often seen on the floor picking orders to fulfill online orders.

Destination stores such as IKEA are likely to ask their assistants to engage with customers through technology – collaborating with them to create a virtual representation of their living space. This might happen on the customer's own smartphone, or even within a VR suite. Across the sector, the big picture is that store experience will no longer be confined to four walls. In their transformed day-to-day work routines, management and staff alike will be focused on delivering experiences, personalization, and technology (at home as well as in the store) to meet the customer's personal desires.

The integrated physical and digital life is here for the long term

And what of broader societal change? With the move to home working many of us are experiencing greater work/life integration than ever before. From home schooling one moment to conference calling the next. Sometimes both of them at once. As a dad, it's been life enhancing to swap the commute for a trip to the school gates to drop my kids in the morning and pick them up at the end of their day. I strongly suspect that, amidst the technology-driven change, our more integrated life is here to stay.

As for the future, I believe that this will help people be more productive. We'll see many more home-based businesses starting, and couples juggling childcare together so they can both work and develop their careers. We're not there yet – for me we're still at the "interrupted normal" stage and the new normal has yet to fully crystalize. But as I said at the beginning, the acceleration is well under way. There's no turning back now.


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