

Humans and machines as co-workers in the workplace of the future



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The capacity for adaptability of human workers is set to become a vital component of the automated workplace of the future, contrary to widely-held assumptions about tech-driven changes.

Labour relations are in the spotlight with employers at Los Angeles and Long Beach ports, management teams at FedEx, and UPS engaged in critically important contract negotiations with trade union representatives. Any one of these talks has the potential to hurt the US economy should the negotiators fail to reach an agreement and protracted industrial action ensues.

Human worker flexibility and automation

The talks cover a range of issues, but a key theme is flexibility. For example, UPS management wants more flexible work contracts that allow the company to flex with changing market conditions. Port employers want the flexibility to introduce more automation to remain competitive.

Image courtesy Somchai Kongkamsri, Pexels



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Flexibility will become increasingly crucial in labour relations, but not how today's negotiators think. In the future – and contrary to popular assumptions about tech-driven change – the flexibility of human workers will play a critically important role in the automated workplace.

Yossi Sheffi's new book, *The Magic Conveyor Belt: Supply Chains, A.I., and the Future of Work*, lays out the arguments for such a future.

Echoes from the past

Over the last 250 years, technological innovation has driven industrial revolutions that have brought transformative change to society in general and the workplace in particular. At the heart of these changes were fears that new technologies would eliminate jobs and bring mass unemployment. These fears stoked labour unrest and violent clashes.

The reality turned out to be far less dystopian. The tech advances that brought about dramatic change also created new employment opportunities. For example, despite the introduction of ATMs, the number of bank tellers in the US increased from about 300 000 in 1970 to 600 000 in 2010. This is because ATMs enabled banks to



operate with fewer tellers, opening more branches and creating more jobs.

We are now on the cusp of an industrial revolution driven by innovations such as artificial intelligence. Will this next wave of transformative change be different from previous ones?

In terms of its overall impact on jobs, the answer is no. Automation will create new employment opportunities as it did in the past. However, we don't know how these future job specs will be defined.

The elements of flexibility

One feature of this unfolding employment landscape we can discern today is that human flexibility will be a valued component. Here are some examples of the flexibility that humans will bring to future workplaces.

Real-world experience

A lifetime of experience in the physical world allows people to detect changes or discrepancies between normal and abnormal situations. For example, during the financial crisis of 2008, companies worried about the financial health of their suppliers. Many companies asked for economic data from suppliers, but these numbers could be manipulated and only provided a lagging, infrequently updated view of conditions at the supplier. To augment the data, companies sent people to spot-check critical suppliers' production of parts or materials on behalf of the company.

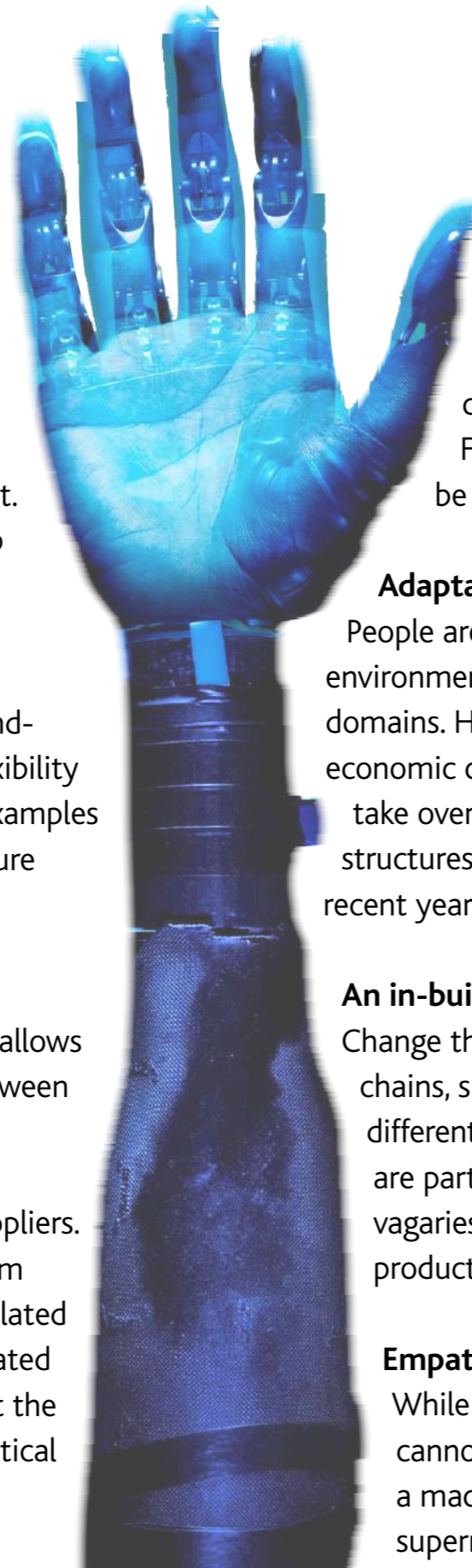


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A moral perspective

Many work tasks involve value judgments and subjective elements based on the system designer's or manager's preferences. However, objectives, moral understandings, and preferences change over time. While machines may be able, if appropriately trained, to sift through large amounts of data and present options for actions, people may have to make the ultimate decisions in cases where the implications matter significantly. This is especially true when the context changes and decisions must be made in a different environment. For example, when prioritising the response to a disaster, should preference be given to customers, employees, suppliers, shareholders, or the community?

Adaptability and coordination

People are more adaptable than robots when faced with unstructured conditions and environments. Robotic software systems are built and optimised for specific tasks or domains. However, change (disruptions, new knowledge, new products, competitors' actions, economic cycles, etc.) can render the machine's appropriateness moot, requiring a person to take over the task. Also, social networks are adept at creating new corporate organisational structures to manage change. This has happened in response to numerous disruptions over recent years, such as the 2011 earthquake in Japan and the Covid-19 pandemic.

An in-built creative drive

Change that requires adaptation is built into many consumer and technology supply chains, such as fast fashion. These fast-moving supply chains search ceaselessly for differentiation that can spur demand for any new product or service. People, not machines, are part of a cultural milieu that stimulates creativity. Also, humans understand the vagaries of everyday life, and this hands-on experience creates possibilities for new products and services.

Empathy and communication

While a growing number of AI applications are used in health care, computers cannot show the empathy required of a nurse while treating a patient. Likewise, a machine cannot replace the smile of a service worker, such as a cashier in a local supermarket. Similarly, few contract negotiations can be completed without both



sides understanding each other, developing rapport, and appreciating each other's points of view. Even though algorithms that mimic these qualities are becoming increasingly sophisticated, it isn't easy to imagine absolute acceptance of machine-generated, simulated emotions and empathy.

Nuanced risk management

While rules can be programmed based on different contexts, the most appropriate choice in a situation that requires a company to select a way forward may differ from the one suggested by the rules.

For example, if the company suspects that a recession is on the horizon, it may prefer the safer, rather than the high-risk, course of action.

Humans are used to taking such nuances into account when making decisions.

Time to look to the future?

Today's management teams and labour representatives can be forgiven for focusing on resolving current issues and avoiding highly damaging industrial actions. However, as automation continues to make inroads into the workplace, at some point, these parties must address how the future workplace will harness human flexibility. **SR**

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