

JULY 2022

VIEW

**Robots are our
friends?**

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ROBOTS ARE OUR FRIENDS?

'Is there anybody there?' said the Traveller¹. Increasingly at hotels in Japan, the answer is a robot. The Henn na Hotel took this to the extreme, "employing" a robotic dinosaur to man its reception desk.

It may seem like a bit of fun, but Japan has a serious reason for embracing this kind of technology. Its ageing population has been troubling policymakers for years and shows no sign of reversing: in 2021, 29.1% of the population was aged 65 or over and the fertility rate decreased for a sixth year in a row². The resulting shrinking workforce means fewer workers to support a growing population of retirees and a battle for talent between companies. And it's not just Japan facing this problem - other countries are catching up. All G7 countries now have more people aged 65 and over than under 15³.



Robots are our friends?

So what's the solution? Some countries, such as Hungary, have introduced significant tax incentives to try to boost the birth rate.

But such schemes are not always successful. China's efforts to move on from its one-child policy are not yet yielding results and forecasts suggest the population could halve by 2100. At that point, every 100 working-age Chinese people will have to support 120 elderly people (currently 100 working-age people support 20 elderly people)⁴.

If we are unlikely to be able to legislate our way to population change, perhaps technology can play a role through the widespread adoption of robotics and automation. Ahead of the rest of the world with its ageing population, Japan has long been seen as a pioneer when it comes to robots. Honda started work on its first humanoid robot in 1986⁵ and robots are taking up roles across multiple industries, from working in factories to supervising former prisoners out on parole and keeping the elderly company in nursing homes.

While other countries may not be at this stage yet, they are increasingly embracing automation. Many of us have used robotic lawnmowers in our gardens or self-checkout kiosks in supermarkets. McDonalds UK recently announced that it will remove traditional ordering counters at 800 locations and shift to entirely digital ordering⁶. Meanwhile in the US, in the first quarter of 2022 orders for workplace robots were 40% higher than the same period in 2021⁷. Traditionally associated with car manufacturing, their use is spreading rapidly to other industries, such as food production, consumer products and pharmaceuticals.

'Efficiency is doing better what is already being done'⁸

While we are unlikely to have R2-D2 rolling into our clients' portfolios any time soon, they do have broad exposure to this trend in two ways. The first is through companies using automation and robotics to deliver efficiencies in their own operations. When we spoke to material sciences company **Avery Dennison**, management noted that the (un)availability of human capital is driving the company to automate processes and that the current inflationary environment is making these investments more attractive. This allows them to upskill the workforce they have and give staff more technical tasks while improving services and response times for customers.

To improve safety and productivity, **Amazon** first invested in mobile robots in its warehouses over a decade ago. It now has 520,000 autonomous mobile robots as well as 12 other robotic systems throughout its facilities⁹. Meanwhile, retailer Next has invested heavily in automation at its Elmsall warehouse which is set to open next year. Capacity is set to increase by 45% while marginal labour costs will be around 40% lower than today¹⁰. In the US, rural lifestyle company **Tractor Supply** is embracing artificial intelligence (AI) to help manage inventories more efficiently across its stores and identify potential cases of theft.

Beyond the retail sector, **Align Technology** has the largest 3D printing operations in the world, producing over 700,000 unique clear aligners every day¹¹. That's equivalent to making over eight aligners a second, a pace which we doubt even the most industrious of workers could match.

1. From The Listeners by Walter de la Mare

2. <https://www.japantimes.co.jp/news/2021/09/20/national/japans-older-population-hits-record-high/>

3. <https://www.globalpolicyjournal.com/blog/10/06/2018/growing-old-gracefully-how-can-g7-mitigate-effects-its-ageing-populations>

4. <https://www.bbc.com/future/article/20220531-why-chinas-population-is-shrinking>

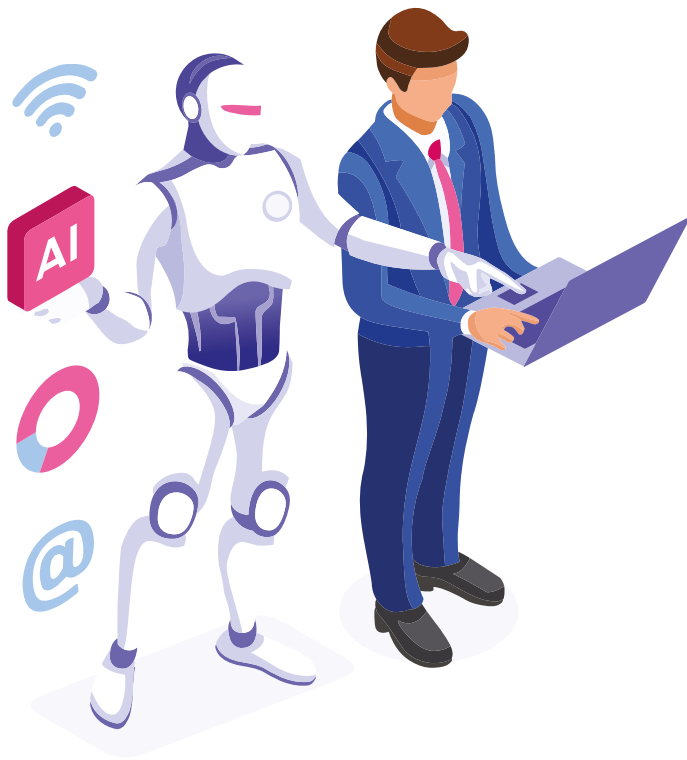
5. <https://global.honda/innovation/robotics/robot-development-history.html>

6. <https://www.forbes.com/sites/bernardmarr/2022/06/22/the-metaverse-and-digital-transformation-at-mcdonalds/>

7. <https://www.wsj.com/articles/robots-pick-up-more-work-at-busy-factories-11653822002>

8. Peter Drucker, management consultant and author

9. <https://www.aboutamazon.com/news/operations/10-years-of-amazon-robotics-how-robots-help-sort-packages-move-product-and-improve-safety>



Portfolios' second angle of exposure comes through companies enabling the shift to automation by providing crucial hardware and software. For the healthcare sector, the labour shortage is biting particularly hard: the Association of American Medical Colleges estimates a shortage of 56,000 surgeons by 2025¹². As the leading provider of robotic systems for keyhole surgery, **Intuitive Surgical** is helping to address this. Its Da Vinci systems provide multiple benefits, for patients and surgeons alike, including minimising the physical toll of the work on surgeons and increasing the number of procedures they can carry out throughout their careers.

Labour shortages are not the only factor driving investment in automation. Where wider costs for businesses are rising because of inflation or regulatory changes, companies have added incentives to invest for productivity gains. And having made the move to automation, companies are unlikely to switch back to manual, providing recurring revenues for the enablers.

'The upward march of the adoption of electronics'¹³
At the component level, the cutting-edge semiconductors and connectors of **Amphenol**, **Infineon Technologies** and **TSMC** (Taiwan Semiconductor Manufacturing Co) can be found in robotics and automated devices across multiple industries, from electrified heavy vehicles to autonomous driving systems and advanced medical devices. Sitting at the intersection of hardware and software, **Synopsys'** chip design technology is resulting in meaningful wins for customers. The CEO recently described how, at a users' conference, engineers shared their achievements using one of

Synopsys' AI-driven design tools, noting that a single engineer can now complete the work of four engineers in half the time¹⁴.

Productivity gains from software are being seen far and wide. Freight forwarder **Kuehne + Nagel** is hauling the logistics industry into the 21st century with its *eTouch* system. Typically, there are 18 human touchpoints in the administration of a shipment¹⁵ so by removing some of these, *eTouch* offers huge scope for cost reductions and error avoidance. It also allows real-time tracking of shipments and guaranteed delivery slots, meaning customers can streamline their own processes further down the chain.

Automation is reshaping the financial sector too. So-called "productivity software" allows decisions to be taken and tasks to be completed in a fraction of the time it would take to run processes manually, speeding up transactions and taking care of increasingly complex regulation. One of **Experian's** customers, Bank of America, makes 7 billion credit decisions a year, pulling data from Experian every single time. Imagine trying to complete that task without the help of digital infrastructure and automation? **ADP's** (Automatic Data Processing) state-of-the-art human resources software means it can process one million payroll cheques for one client in a single day¹⁶. Meanwhile, by embedding automation in its consumer tax and business accounting products, Intuit is taking "the drudgery out of common financial tasks", helping its 100 million customers to save time and make more informed financial decisions.

'Every industrial revolution brings along a learning revolution'¹⁷

Of course it is not always plain sailing when using robotics and automation. Getting the balance right between workers and automation requires careful planning. At Henn na Hotel, 50% of the robot workforce were "sacked" as they were too unreliable, and guests complained about the level of service (or lack of it) they provided. The hotel has since had to increase its ratio of staff to robots. In spite of cases like this, there are also very real concerns that robots are going to take jobs from workers, rather than make up for a shrinking workforce. We are likely to need government input to minimise this and ensure that education is adequately equipping workers for the workplaces of tomorrow.

The demographic dilemma of human labour as a scarce resource provides a structural tailwind to the adoption of robotics and automation. We believe that in the current inflationary environment, the benefits are even more relevant as companies invest for long-term improvements in efficiency and productivity.

10. <https://www.nextplc.co.uk/~media/Files/N/Next-PLC-V2/documents/2022/annual-reports-and-account-jan-2022.pdf>

11. <https://investor.aligentech.com/news-releases/news-release-details/align-technology-expands-global-operations-support-growth-and>

12. <https://www.aamc.org/news-insights/we-already-needed-more-doctors-then-covid-19-hit>

13. Adam Norwitt, Amphenol CEO

14. <https://blogs.synopsys.com/from-silicon-to-software/2022/05/19/ai-chip-design-snug-2022/>

15. <https://newsroom.kuehne-nagel.com/digital-transformation-kuehne-nagel-further-simplifies-digital-accessibility-and-collaboration/>

16. https://s23.q4cdn.com/483669984/files/doc_financials/2022/q2/Transcript-FY22-Q2.pdf

17. Alexander de Croo, Belgian politician

SPOTLIGHT:

WHAT HAPPENS ON THE INSIDE OF A COMPANY IS BEING FELT ON THE OUTSIDE BY THE CUSTOMER¹⁸

In a world where automation is increasingly prevalent, does it still matter how companies treat employees? We believe it does: the "S" in "ESG" can have significant financial implications for companies which is why it regularly features in our conversations with companies.

When competition for talent is fierce, being able to recruit the best workers and, crucially, hold on to them is a real competitive advantage. Estimates suggest it costs over \$5,000 on average to hire and onboard a new employee¹⁹, so costs quickly spiral if turnover is high. And that's before factoring in the unquantifiable costs of losing experienced employees. As an employer of choice in many markets, **Infineon Technologies** has improved product quality for customers as staff with expertise are retained.

It's not just employees who leave who are costly. One study found that disengaged employees cost US companies \$450-550 billion every year²⁰ whereas looking after employees yields results. During the pandemic, **Tractor Supply** increased hourly wages and access to benefits for workers across its stores. The CEO has drawn a direct link between this investment in workers and improved customer satisfaction scores. High workforce loyalty also meant **Bunzl** has not faced the same recruitment struggles as others in the logistics sector.

Sometimes data can be helpful in assessing which companies are walking the talk. For example, **Mastercard's** low attrition rates demonstrate the success of its focus on purpose while **Accenture's** ability to grow its headcount by 31% in a year²¹ clearly shows it also has the coveted "employer of choice" title.

But data rarely tells the whole story. Our engagement work gives us the opportunity to explore these

areas in more detail. On a sustainability-focused call with **Thermo Fisher Scientific**, we discussed the significant efforts the company puts into talent attraction and retention, and the improvements it has made to salaries and benefits following its success throughout the pandemic. **Hasbro** explained how checks revealed that a major supplier with 30,000 workers did not have an HR policy. Hasbro was able to get this changed, benefitting both the workers and other companies using this supplier.

Of course, no company will get everything right all the time and where there are allegations of poor practice, we take them very seriously. Prior to investment, we spent considerable time exploring how **Amazon** is improving conditions for its employees and this work has continued since we became shareholders to ensure that progress is maintained.

When he visited our offices, Amphenol's CEO noted that looking after your people is good for business. We see this sentiment shared by all our companies, and we believe it will remain just as relevant in a more automated world, where robots and people work together.



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on behalf of the Investment Team

18. Shep Hyken, customer service expert

19. <https://haillo.com/blog/employee-engagement-8-statistics-you-need-to-know/>

20. <https://www.conference-board.org/topics/dna-of-engagement>

21. <https://www.accenture.com/gb-en/about/company/annual-report>

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