An investment perspective:

WINNERS TAKE ALL IN THE AI EVOLUTION

For active asset managers, artificial intelligence promises deep change that will touch many holdings in their portfolios. Interview with Neil Robson, Head of Global Equities at Columbia Threadneedle Investments.

QUICK READ

- **"Superstar companies" that successfully harness AI to gain formidable competitive advantages will grow their profitability significantly. Meanwhile, some undervalued companies face major challenges to their business models and may not exist 10 years from now.**
- **AI's progress is set to accelerate in the next few years and will affect many stocks in an investment portfolio.**
- **A key benefit of AI in many sectors will be the opportunity to capture efficiency and productivity gains. Relatively small productivity gains could lead to far larger increases in returns on invested capital.**
- **Other businesses will harness AI to accelerate revenue growth by developing new products and services, based on the insights provided by data that they own, generate and, in some cases, buy in.**
- **AI will entrench the dominance and superior profitability of a few leaders in major business sectors.**

Neil Robson
Head of Global Equities

In AI's accelerating evolution, the winner is surely likely to take a greater market share. Think of Amazon, Google and Microsoft in cloud computing, a vital form of infrastructure for AI. They dominate the sector that is poised to grow swiftly as AI supercharges its adoption, and such is their scale that new entrants will find it hard to compete.

In most other areas, the biggest winners of AI are harder to identify; even so their potential is great. AI has the power to transform productivity and supercharge revenues. On this view, adoption of AI will effectively lead to a wider dispersion of outcomes for companies and their shareholders, as successful companies compound their competitive advantages over time.

"As AI develops, the businesses that can adapt are more likely to accelerate this trend (of diverging performance) than to see any sort of mean reversion," says Neil Robson, Head of Global Equities at Columbia Threadneedle Investments. "In terms of growth versus value investing, the real message is that there's an underlying change and many businesses will see the reverse happen, where their business models face a massive challenge. An awful lot of value stocks have major issues – on a 10-year horizon, will they still exist?"

In terms of commercial applications, AI remains in its formative stages: many 'AI winners' have yet to emerge and some sectors that will ultimately be transformed by AI remain largely untouched. However, Robson believes that AI's progress will accelerate significantly over the next few years and that some, at least, of the dynamics that will characterise this process are already visible.

Changing the game in productivity

A key benefit of AI in many sectors will be the opportunity to capture efficiency and productivity gains by using AI rather than humans to make critical, real-time decisions. Much has been written already about the potential to automate many routine administrative tasks in sectors such as banking. But Robson also highlights the potential for AI to transform efficiency in capital-intensive industrial settings, where its effects could be significant.

He cites the example of semiconductor fabrication plants, which are already heavily automated, but where Intel has suggested that having decision-making by AI could lead to entirely automated chip production, giving incremental productivity gains of 2%-3%. "A 2%-3% gain in output from a fab probably represents the difference between

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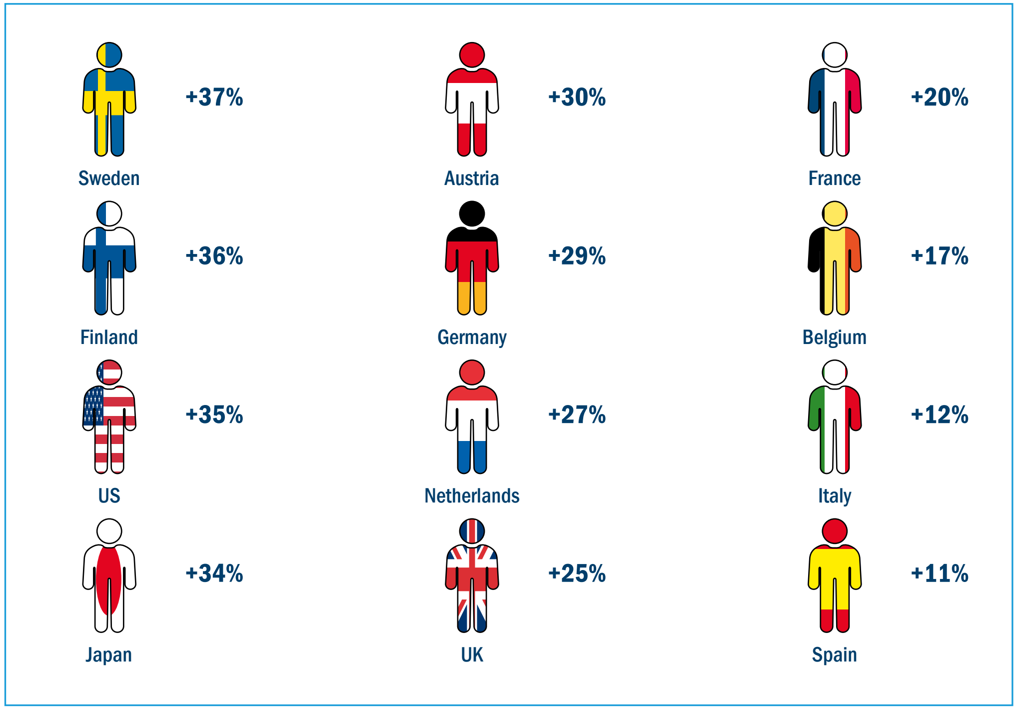
achieving a high-teens return on invested capital and achieving 30%. The gains could be that big," he says.

Similarly, Robson highlights the example of a small-cap company which produces 'quasi-AI' automated control systems for industrial applications including refineries. By aggregating real-time price data for the range of products the refinery can derive from a barrel of crude, it can optimise the refining process in order to maximise the value of the outputs from every barrel that goes through. Again, the steady progress of technology systems towards intelligent automation has the potential to manage complex processes and unlock significant efficiency gains. In capital-hungry sectors, even small productivity gains can transform the economics of the industry leaders.

As well as optimising key business operations, he suggests AI will fundamentally change near-universal corporate practices such as forecasting, which today frequently involves entering information manually in complex, error-prone spreadsheets. As that process is automated, it will change the way companies behave, Robson suggests. "AI enables any industry or business that does any sort of forecasting to do it better, quicker and cheaper. If you can do it better, quicker and cheaper, you'll probably do more of it. So I think the amount of forecasting and modelling that people will do is undoubtedly going to go up." If companies can reduce the need for human intervention, increase their forecasting capacity and improve their results, the benefits should be significant.

Forecast rise in labour productivity with AI by 2035



Source: Accenture and Frontier Economics Sepember, 2016.
Percentage increase in labour productivity with AI, compared to expected baseline productivity levels by 2035.

Unlocking revenue growth

Robson suggests the second major source of gains from AI will come from the ability to use it to accelerate revenue growth, by developing new products and services based on data that companies own, generate and, in some cases, buy in to augment their proprietary resources. The results of this process lie further in the future and, at this stage, it is hard to predict the outcomes of AI-enhanced corporate R&D and product development. Nevertheless, the potential opportunities here are very large, he argues.

The revenue gains that successful new products and services deliver could be significant. But Robson also points out that in order to apply AI effectively to their data and unlock new sources of value, companies will have no choice but to move their data resources from corporate silos into central 'data lakes,' which are most likely to be held in the public cloud.

The benefits of this transition are two-fold. Not only does it make all of the company's data AI-accessible in one place, facilitating the product development process, but it also significantly reduces the business's technology infrastructure costs. "As you go towards cloud solutions, you drop your (IT) cost structure 20%-plus and you have the ability to innovate and develop new products because all of your data is in one place," he says. "That might make your data even more valuable, which means you might be able to charge more." Successful adoption of AI therefore holds out the prospect of developing revenue-enhancing products and services while simultaneously enjoying the benefits of a leaner technology cost base. This points to another route through which AI could

> "The competitive gains AI delivers will reinforce the skew of returns on equity towards the top decile of companies, further concentrating gains among the leading players, where sustained RoE of 30%-40% will be achieved."

Paying dividends: Proven premium value

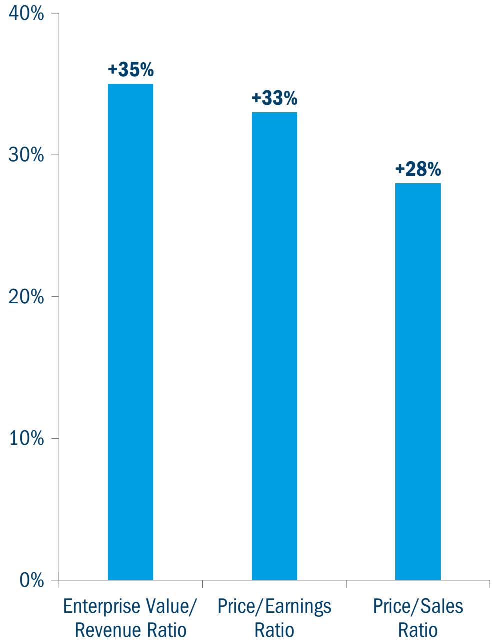
In 2019, Accenture surveyed 1,500 C-suite executives at companies with a turnover of more than US$1 billion from across 12 countries and 16 industries. Overall they reported a positive return on their investments. Accenture dug deeper.

Was there any relationship between successfully scaling AI across the enterprise and key market valuation metrics? What was the 'premium' for being a leader?

Using survey data combined with publicly available financial data, Accenture's team of data scientists created a model to identify the premium for companies in its sample that successfully scale AI, controlling for various characteristics of the companies.

Accenture discovered a positive correlation between successfully scaling AI and three key measures of financial valuation: Enterprise Value/Revenue Ratio, Price/Earnings Ratio, Price/Sales Ratio.

Companies that were identified as Strategic Scalers realise a success rate of 70% or more in their AI scaling initiatives and a return on their AI investment of 70% or higher.



Source: Accenture 2019.
https://www.accenture.com/_acnmedia/Thought-Leadership-Assets/PDF-2/Accenture-Built-to-Scale-PDF-Report.pdf#zoom=50

enhance returns on invested capital for successful adopters.

Taken together, these predicted gains from applying AI to multiple business processes are likely to secure major gains in operational efficiency and revenue growth for the most successful companies. This dynamic should be expected to reinforce a trend that has been apparent for some time, in which a subset of what the consultancy McKinsey has called 'superstar companies' open a steadily growing lead over the rest in terms of returns on equity. Robson suggests that the competitive gains AI delivers will reinforce the skew of returns on equity towards the top decile of companies, further concentrating gains among the leading players.

Who are the winners?

The possible applications of AI are diverse, to say the least: from an AI-enabled oven that can decide how to cook whatever is placed inside it to the use of facial recognition technology to combat child trafficking. "When you read the use-cases you realise this is everywhere. Every single stock in your portfolio is going to be impacted in some way," says Robson. Equally, as other technologies such as 5G wireless networks mature, opportunities will proliferate to apply an 'AI layer' to huge new data flows – for example, from the 5G-enabled networks of sensors that will form the 'internet of things.'

From transport, energy and communications networks to virtually every manufacturing process, the scope for AI-based, real-time decision-making will vastly increase. As this happens, new products will emerge and consumer behaviours will change. Robson compares what will happen to the changes that followed the switch from 3G networks to data-enabled 4G. “Who would’ve guessed that making a phone call wouldn’t even be in the top 10 things we do on our telephones any more?”

He views the next three years as a period dominated by the build-out of AI infrastructure, including wider adoption of cloud computing, the introduction of 5G networks and increased efforts by companies to aggregate and structure their data. Potential winners during this phase are relatively easy to spot. Major data owners are well placed, particularly if they can use AI to enhance their offering in data analysis, he suggests, as are leading providers of essential hardware such as NVIDIA, maker of the leading programmable chip sets deployed for machine learning. Similarly, he believes existing leaders in fields such as industrial automation (eg, Keyence of Japan) or gene sequencing (eg, Illumina of the US) can use AI to enhance their existing competitive advantages.

However, the clearest winners are the oligopoly that dominate cloud computing: Amazon and Microsoft in front, followed by Google. “Total enterprise spend on computing is over a trillion dollars a year and Amazon Web Services in 2020 had annual revenues of around $45 billion, and Microsoft grew by 50% last year. So maybe they’re at $80 billion-plus between them. That’s going to go to $500 billion-plus and I don’t see any new entrants in this business. It’s almost impossible because you would just bleed cash.”

Robson suggests that although Google trails the top two in cloud services, AI adoption is likely to make it a stronger player as it leverages its heavy investment in AI talent to provide cloud services augmented by AI tools – the ‘AI as a Service’ model. “What we’re hearing back from companies now is that there’s a renewed look at Google because of their AI tool sets. As you move towards AI, Google’s cloud business should improve.” As AI adoption spreads, the leading cloud providers are likely to see their returns on invested capital settle in the high-30% range, further entrenching their long-term outperformance.

How much of a threat do these tech giants pose to leading players in other industries?

> "Autonomous vehicles present a global market opportunity for the tech giants that parallels the opportunity Microsoft seized in operating systems for personal computers."

There are clear risks, Robson suggests, for example in Google's ambitions in autonomous vehicles. If Google became the dominant supplier of control systems for autonomous vehicles, the effects could be dramatic. At a licensing cost of $3,000 per vehicle, Google would consume the entire EBITDA margin of the typical auto industry original equipment manufacturer, which stands at around 12%, he says. "There's a shift in the value chain. It probably won't be as dramatic as that but it's a shift in the value chain that is absolutely vital for investors to get right."

Autonomous vehicles present a global market opportunity for the tech giants that parallels the opportunity Microsoft seized in operating systems for personal computers. In other industries, however, Robson believes they are much less likely to displace sector specialists because they do not have the necessary domain knowledge or data to compete effectively. Instead, they will provide the enabling infrastructure and tools, rather than attempting to dominate the entire value chain.

The challenge for investors, therefore, will remain the same: working out which companies have the strongest competitive advantages and are best positioned to benefit from the dynamics at work in their industries. "It's easy to identify the data providers, the tool providers and the tech giants who are clearly going to win in AI," says Robson. "But when you apply it to different industries it gets much harder. Who's going to do best in banking? Will it be the existing banks or someone from outside the industry? That's where it comes down to investors having conversations with companies to understand what they're actually doing."

Neil Robson biography

Neil Robson is Head of Global Equities at Columbia Threadneedle Investments. He took up this role in July 2017. He joined the company in 2011 as a portfolio manager within the Global Equities team.

Robson is the manager of several global equity funds and mandates for institutional clients. He is also the co-manager of the Threadneedle Global Extended Alpha.

Before joining the company, Robson worked as a fund manager at companies including Martin Currie, Barings and Citibank. In addition, he was Head of Global Equity at Pioneer Investments from 2003 to 2009.

He has an Economics degree from the University of Bristol.

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