

# CEO's Briefing



## AI and its impact on business

If you thought Tesla were only making cars and batteries, think again – they're now making roof tiles!

Companies from Amazon to Aviva are investing in future technology like Artificial Intelligence (AI), changing their businesses, and filing patents to protect their new ideas.

They aim to radically change how they work, to redefine good service, and to massively reduce their costs.

This is concerning for domestic, mid-sized businesses for whom this kind of innovation can feel out of reach.

But this briefing aims to sort fact from fiction and to separate what's hype from what's happening. It also provides some real-world examples drawn from our own clients to illustrate the art of the possible right now.

### Is the gap widening?

The OECD's "Future of Productivity" report found that world-leading firms are increasing their lead because they adopt new technology, streamline processes and systems, and recruit the best management. And the OECD's view is that these advantages often don't "trickle-down" to other firms.

Tech-based multinational firms have massively increased their value in recent years and expanded into almost every sector. These companies may have started as just tech pioneers but they are now profoundly altering areas like media, automotive, advertising, education, retail, logistics and energy. If you thought Tesla were only making cars and batteries, think again – they're now making roof tiles!

And their vast cash reserves are driving new technologies like AI which promise more profound changes to pretty much every industry in the future.



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In this context, Andrew Haldane, chief economist at the Bank of England said 1% of British firms increase their productivity consistently by 6% pa – this means these firms are 50% more efficient every 7 years - whereas a third of British companies have seen no rise at all in their productivity this century.

So a third of British firms have not improved since Tony Blair was young and popular, and Ricky Martin was Livin' la Vida Loca. To illustrate the point, according to the Economist, last year 6,000,000 typewriter ribbons were sold in the UK and one tenth of the word's paper is used by the NHS.

So there appears to be a gulf opening up between those adopting new tech and the rest.

## But how much of this is just hype?

Tech giants have an interest in convincing us that the future has already arrived and, most importantly, that they own it! To some extent they are trapped in a cycle of ever-greater hyperbole.

Many business activities have not really changed. I'm writing this briefing in pretty much the same way I might have done 20 years ago; most people's jobs are not very different to how they were 2 decades ago.

Amazon announced drone-based delivery to much fanfare in 2013 but the reality of this service is still many years away! Look out of your window and you won't see many drones delivering shopping.

Many supermarkets have expanded massively online, but it is widely understood that the profitability of this channel is extremely poor. In many cases supermarkets' existing customers are simply buying from them online so the retailers have just swapped high margin business for low margin business.

And Lidl and Aldi, who are seeing massive success in the UK, are conspicuously ignoring the online channel. This may confound many analysts, but for traditional retailers it creates an even bigger headache – they are squeezed by both low-cost high street competition and new high-tech online competition.

## Opportunities for ambitious businesses

The rise of new tech for global giants doesn't necessarily mean that they will “pull up the ladder behind them”. In many cases these changes are increasing the size of the market for all, stimulating new demand and creating new technology opportunities that everyone can take advantage of.

Amazon and ebay offer retail space for smaller players (though at a cost!) and online media has radically changed TV, radio, publishing and advertising - but all these markets are larger now, not smaller.

eCommerce has driven changes in the logistics industry which has brought opportunities for all, and in many cases new technology favours smaller, nimble businesses over larger. Amazon offers its own technology services (under the AWS brand) which allows smaller businesses access to an amazing wealth of opportunities without the need for major upfront investments.

Artificial Intelligence services from Microsoft and IBM (under the Watson brand) are available at low cost to any programmer and any company that has the vision to make use of them. Put simply, it is no longer necessary to spend millions to buy your own supercomputer!



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One of the most popular forms of AI is machine learning and services from Watson, for example, allowing any company to have access to this at affordable costs. Machine learning generally means software that makes sense of situations based on learning from examples, rather than having a human expert work out the rules. This may be because the human experts can't articulate the rules, or because the problem is too complicated for a human to really be an expert.

One of our clients in the legal sector is aiming to use machine learning to search for existing cases or “prior art”, and analysing client documents to automate drafting of standard submissions. The aim is to ensure that experts can focus on high-value activities rather than sifting through documents and cutting and pasting. This is a challenging aim, but the potential upside in people-intensive, high salary industries like legal makes it worthwhile.

One of our Principals is using software to analyse company reports and updates searching for news and classifying it into “good” or “bad” to predict changes in company credit worthiness or market movements. The volume of news and the speed of markets is so great that there may be scope for machine learning to outperform humans in monitoring developments all over the world in real-time. Again, this is not easy to achieve, but it demonstrates how companies of all sizes can find opportunities to capitalise on their skills and knowledge using AI.

Facilities like Watson also offer artificial “perception”, for example interpreting sounds, images or text in order to process speech, written language or facial recognition. For example, we are working with one of our clients to create software bots to handle simple customer service requests so humans are only necessary for more complex problems. In phone and text chat situations, AI can handle a customer who says “my delivery hasn't arrived” or “can I change my address because we've moved” using a combination of perception and machine learning software. The aim can either be to handle the entire transaction or just to route the request to a human faster than a traditional phone menu system “Press one for help with deliveries...”.

For another client, who offer recruitment services for corporates, it is conceivable that AI could process large numbers of video interviews to search for specific traits in applicants like “thoughtfulness” or “aggression”. This may not be too far off.

Another major area for AI is complex planning; software that can work through options and implications and work out the best way forward based, even in fuzzy and uncertain situations. This could make a significant difference for companies with fluid capacity planning, or for example with complex routing in sectors like logistics.

## The rise of the robot

Autonomous or semi-autonomous robots are increasingly evident in a range of situations. Staff in some Amazon warehouses no longer pick from shelves but instead the shelf comes to them. Though packing is still largely manual, surely it won't be long before this is automated or partially automated as well.

Software robotics is less talked about but more prevalent. Software robots generally take the place of humans using systems in office situations. For example, for one of our clients in professional services we are using automation technologies to handle tasks like new client onboarding and billing which involves a number of systems, documents and communication, but is often largely routine.

For another client in the travel sector, we have used software robotics to automate large parts of the back-office that would have been handled by office staff in the past. So a customer can use the company's website to browse destinations and activities, bring everything they want into a single package and place an order.



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We have overseen the implementation of all the necessary systems behind the scenes and joining this all together in the background using automated robots rather than people. Obviously there will be exceptions where users have to step in, but these will be the minority.

Combining many of these ideas, one of our clients scans the internet searching for copyright and trademark infringements using visual recognition, and then pursues cases automatically: issuing take-down notices, composing correspondence and other paperwork automatically and following the case through as far as possible without human intervention.

In all these examples we start by understanding the company's strategy, it's points of difference, and how it adds value. AI (or any other IT!) needs to be used to support the company's strategy and to build its value rather than fighting against it.

Put simply, does your company aim to be cheaper? or faster? or provide better service? Then the question is: how can AI make you cheaper, faster or improve service... Your focus should be how can AI remove distractions and allow you to focus on things that matter; and on expanding the growing and profitable parts of your business.

## These trends may not favour the largest companies

At a macro level, technology and automation often reduce economies of scale and reduce the benefit of offshoring to low cost economies - the fewer humans are involved in a business, the less it makes sense to relocate its activities to a low-wage economy. Whereas delays and costs of transcontinental shipping and communication grow in importance and will be major competitive disadvantages.

The growth of 3D printing will also contribute to a gradual swing back to local manufacture, though the nature of manufacture will of course be very different. But mass customisation and the ability to respond rapidly to changing consumer demand will be at the heart of competitiveness and profitability.

Put simply, the more automated your business, the more your strategy can be focussed on your customers and being close to them, both in terms of understanding their needs and being geographically local.

Many of these trends favour well-run, mid-range businesses with a strong understanding of their market and strong links to their customers. The critical ingredient is simply a desire to innovate and take advantage of new opportunities.

Hype has always been part of the IT marketing machine, but we are working with many of our clients to make use of AI today. To find out more about how you can use IT for growth and competitive advantage get in touch.

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