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# How will the Fourth Industrial Revolution change jobs in the automotive industry?



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# Introduction

Despite a modest drop in 2017, the automotive industry is enjoying a period of sustained buoyancy in the UK, (latest figures reveal it turned over £77.5bn in 2016). It's also a massive employer.

The Society of Motor Manufacturers and Traders' (SMMT) **2017 UK Automotive Sustainability Report** shows that almost 110k people work in the industry right now – equating to a year-on-year increase of 11.9 per cent - while a further 814,000 are employed in roles that are dependent on the sector. Staff turnover is fairly low, at five per cent, suggesting that many people remain in the industry for life.

It's unsurprising, therefore, that the report identifies human capital as key to the sector, and as such, it's imperative that employers create a long-term, holistic skills strategy to maintain growth through this current period of incredible change. Change otherwise known as the Fourth Industrial Revolution.



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# What is the Fourth Industrial Revolution?

There's been a lot of talk about how the Fourth Industrial Revolution (also known as Industry 4.0, i4.0 and 4IR) will bring about developments which impact upon every single aspect of our lives. According to the [World Economic Forum](#), it is characterised by the 'convergence of breakthrough technologies... that are transforming productions, processes and business models across different industries.'

The first Industrial Revolution occurred during the 17th and 18th Centuries, changing manufacturing, working conditions and people's very existence. This fourth incarnation is expected to do the same, but through use of advanced robotics, artificial intelligence (AI), the internet of things (IoT), virtual and augmented reality, wearables, the list goes on - essentially, tech which has the potential to reinvent processes and, in turn, jobs. Why? So that industry can meet increasing consumer expectations and demands.

Speaking about i4.0, [Wolfgang Lehmacher, the WEF's head of supply chain and transport industry](#) said: "The changes in other industries will have significant impact. Let's take the automotive industry. The move towards electric vehicles will disrupt the world in a big way. Electric vehicles have less moving parts and run more mileage than combustion engine powered vehicles. This means less maintenance, less spare parts, less cars sold, less parts and cars to be transported; of course also less oil needed, sold, and transported."

**"It's about disruption, reshaping solutions and innovating activities."**

'Change' clearly is not a strong enough word to describe the predicted effects of i4.0, particularly in the automotive industry. It's about disruption, reshaping solutions, innovating activities, and (so we're led to believe) making our lives easier and more enjoyable, both in and outside the workplace.

[Read: 7 automotive industry trends you need to know](#)

Reportedly, we're already a decade into i4.0, so it's unsurprising that disruption to jobs is already happening. Though it seems concerns have only developed, or at least been voiced, in recent years.

The biggest fear for workers, of course, is that the increase in automation will make jobs, or large aspects of jobs, redundant. Deloitte's [Power Up: UK skills](#) report claims 35 per cent of jobs will be at 'high risk' of automation within the next two decades (in China, this is expected to be around 77 per cent). But it isn't all bad news. The report continues that, as with previous industrial revolutions, advanced technology can 'create more jobs and wealth for people', augmenting roles rather than ruining them. Giving us back time and the possibility of improved work-life balance. So we should be viewing i4.0 as exciting, especially for those in the automotive industry.

# How will i4.0 impact jobs in automotive?

Many of the numerous, rapid developments i4.0 promised have already been embraced by manufacturers. Nissan is developing **Brain-to-Vehicle** technology, designed to enhance driver performance. General Motors is using IoT to eradicate downtime. BMW uses robots to produce 3D vehicle scans. Jaguar Land Rover has pledged that all new cars will be electric by 2020 and Aston Martin is developing a fully-electrified SUV. With all this innovation planned, there will obviously be impacts on jobs, but in which ways?

## Digitisation will cause a decline in low-skilled jobs

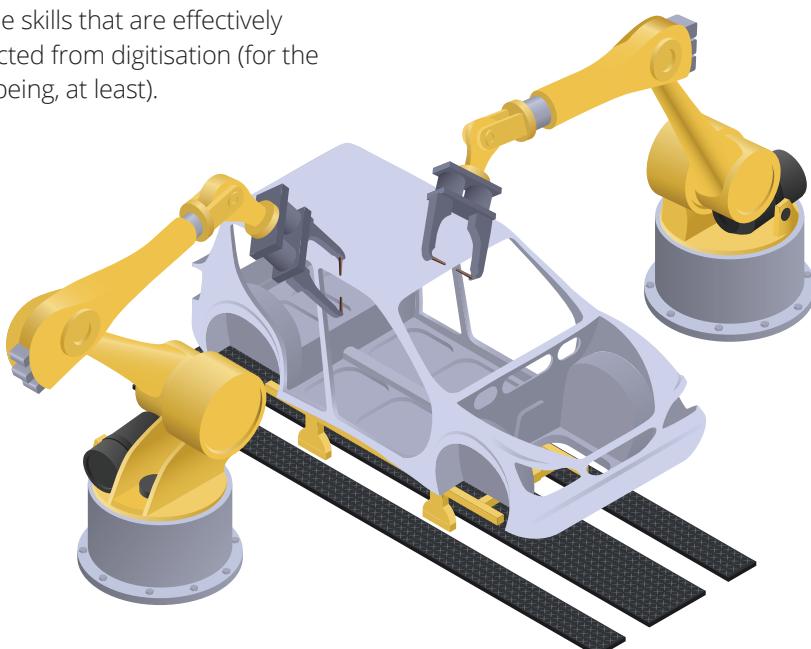
The automotive industry is already reaping the benefits of digitisation. The **SMMT claims** increased productivity and reduced time-to-market is worth £4.3 billion to vehicle manufacturers alone, predicting that figure to reach £74 billion by 2035. While that's great news, it means that a sector which traditionally features low-skilled tasks will be forced to look at itself.

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Robots, programmed with near human-like dexterity, are more capable than ever of performing manual and routine tasks, the consequence of which, as **Frey and Osborne** wrote in their 2013 Oxford University study, means low-skilled workforces will need to shift to tasks that utilise 'human skillsets' – i.e. creative and social. These are the skills that are effectively protected from digitisation (for the time-being, at least).

This is nothing new. In 1933, the economist **John Maynard Keynes** foretold of widespread technological unemployment "due to our discovery of means of economising the use of labour outrunning the pace at which we can find new uses for labour". It's also why in 1589, Queen Elizabeth I refused the patent on a **framework knitting machine**, stating it would impact her subjects' employment security and 'make them beggars'.

However, **upskilling existing employees** with new, in-demand skills should help affected staff transition into other roles.



## We'll need to nurture the human skillset

The 'human skillset' might once have been dismissed as merely soft skills, but social, creative and cognitive abilities are what will differentiate applicants from each other and will drive the automotive industry forward during i4.0. In fact, Deloitte's [Future of Work](#) study finds that nearly a third of high-paying new jobs will be 'essentially human in nature'.



Plus research by [Hyundai](#) suggests that manufacturers will have to become more creatively minded in their approach to winning customers, which will offer huge opportunities for creatives, artists and 3D printing engineers to get involved in future vehicle design.

Among the skills that the automotive industry should prize going forward, are:

- Leadership and strategic management
- Operational expertise
- Creativity
- People development / coaching
- Negotiation
- Critical thinking
- Problem solving
- Emotional intelligence
- Analytical abilities
- Cyber security

**Nearly a third of high-paying new jobs will be 'essentially human in nature' – Deloitte, Future of Work**

These skills will be key for the types of 'new' non-engineering automotive jobs 'of the future', some of which are already in existence. According to [Forbes](#) and Hyundai, these include web programmer, head of robots, analytics expert, interaction designer and sustainability integration expert.

In addition, a skills study by Deloitte discovered that self-sufficiency, the ability to work alone and building relationships digitally will become increasingly important. Meanwhile, the study says there will be a lesser emphasis on specialist skills.

Right now, the UK economy is experiencing growth in jobs which are viewed as having the 'strongest transferable human skillsets', which is expected only to increase. In automotive, hiring managers will need to look outside the industry and place greater value on transferable skills gained in other sectors. This means re-examining candidate expectations and shortlisting people based on human skillsets, potential and team fit, not merely on the experience listed on a CV.

## Engineers remain crucial, but their expertise will change

There's no doubt that automotive engineers are, and will remain, the backbone of the industry. In its 2016 [UK Automotive Industry jobs and skills report](#), The Automotive Council identified design engineer and production engineer as both 'critical now' and 'future ongoing'. However, i4.0 will demand new engineering positions, e.g. with electrification all the rage, it's likely that battery propulsion engineers will be heavily in demand.

The point is highlighted by [Tom Capalbo](#), of US automotive recruiter, Aerotek, who says that automation "Creates a big demand for new jobs — the people who design and engineer these emerging technologies and the people whose job it will be to oversee and manage the technology on the ground.

"This fundamentally changes the kinds of engineers we need to fill these **new jobs**. We need subject matter experts in autonomous vehicle design and this is such a new field these people are hard to find."

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## Autonomous vehicles could impact truckers

Of all the innovation i4.0 has prompted so far, perhaps one of the most controversial breakthroughs is the autonomous truck. Tesla, Uber and Volvo have all developed, or are in the process of developing, driverless trucks, which are said to offer economies of time, money and emissions – and require fewer drivers.

It's a concern that JLR CEO, [Ralf Speth spoke about recently](#), worrying that Britain's hard-working truck drivers could lose jobs when autonomous vehicles are ready to hit the roads.

"What happens to society if they lose their jobs? Who pays for them? What happens to the social fabric because of the mobility revolution?" He was quoted.

His view isn't universally shared, however, so maybe we're worrying unnecessarily. The American Trucking Association [claims](#) the current shortage of 50,000 drivers will double in the next five years, plus [Uber's vision](#) is one where human drivers assume the controls between transfer hubs, through towns and cities, while the self-drive only takes place on highways. It could be, then, that drivers will keep on truckin' for some time yet.

## We'll see more 'hybrid jobs'

At the moment, jobs tend to fall under one discipline or another. Technical or scientific, managerial or creative; roles have typically been fairly siloed. However, to meet new technological demands, i4.0 has seen the creation of the 'hybrid' job – especially in circumstances where there are skills shortages.

Deloitte's [research](#) suggests that future roles will incorporate design, project management and technical elements, offering a diversity of work few have experienced up until now. Hybrid candidates are those who can bring a combination of hard and soft skills to the company, and possessing hybrid skills is a way for employees to future-proof their careers and/or enhance their profile when job hunting.

## Employees want more flexibility

It's said that flexible working will be '**the new normal**' throughout i4.0. We've seen attitudes to work change recently – millennials are said to value work-life balance more than their parents or grandparents ever did, and flexible working options are often valued more highly than salary for those **seeking jobs**. The automotive industry will need to keep pace, especially if it wants to encourage new blood through its doors.

Deloitte's study suggests there will be a shift away from team working and regular hours. According to the **WEF**, talk has turned away from jobs at risk to shifts in required jobs. It believes a 'new form of flexibility will be required for humans to work alongside Fourth Industrial Revolution technologies such as robots'. It's likely that new job profiles will emerge for remote, connected and non-traditional working. While this may have been tricky for the automotive industry in the past, these tech-enhanced, new jobs may be more amenable to flexibility – which is what employees are looking for.

## A need to enable the ageing population

Not only will the industry have to cater to older drivers (with that in mind, Hyundai has already revealed a 'health and mobility concept cockpit to cultivate the wellbeing of drivers'), but it will also need to find ways to keep older employees engaged and productive.

The SMMT report highlights the ageing population, predicting that by 2040, one in seven people will be aged over 75 years. Hence employers will need to find ways to enable employees to work for longer. Solutions might include considered retraining programmes, reasonable adjustments and flexible working options. Naturally, it's in everyone's best interests to allow older employees to keep working if they wish, as a way to keep and pass on human and technological skills which may be in short supply.



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# What do employers need to do?

A survey carried out by [Forbes](#) and [Deloitte](#) discovered that many organisations either weren't viewing human capital impacts with any kind of urgency or didn't believe that the 'uncertain impact of Industry 4.0 on the workforce will have a significant effect' on them. In short, they are not taking it seriously. Many others, meanwhile, claimed to be reliant on the education system to equip its future workforce, while existing staff could simply be retrained. This naïve approach will surely have a detrimental impact on businesses. Fortunately, there are many activities organisations can participate in to prevent uncertainty and significant effects. Such as...

## Re-skill your workforce

Don't believe that skills shortages will dissipate, purely because advanced technologies are in widespread use. As we've said above, it'll simply be a case that the skills which are in demand change – and those are the human skillset.

Deloitte's report shows that the [lowest-skilled areas in the UK](#) right now are Wales, the Midlands and North East - locations which

are home to several automotive manufacturing plants. For businesses to compete, the WEF says new skills need to be developed which can monitor and master these new production processes. Given the decline in low-skilled roles and the rise in creative ones, it's crucial that reskilling initiatives are implemented. This helps to safeguard your workforce and can boost employees' own job security.

## Build a robust talent pipeline

Given everything we've said in this article, it's clear that building a robust talent pipeline should be near the top of your agenda.

A good resource to explore is the [Automotive Industrial Partnership](#), which is a collaboration between the government and automotive industry, set up by the Automotive Council. It brings together major players to ensure a future talent pipeline. It offers lots of advice on initiatives you can get involved in, such as getting involved with local schools to ignite an interest in STEM subjects, offering apprenticeships and attracting graduates.

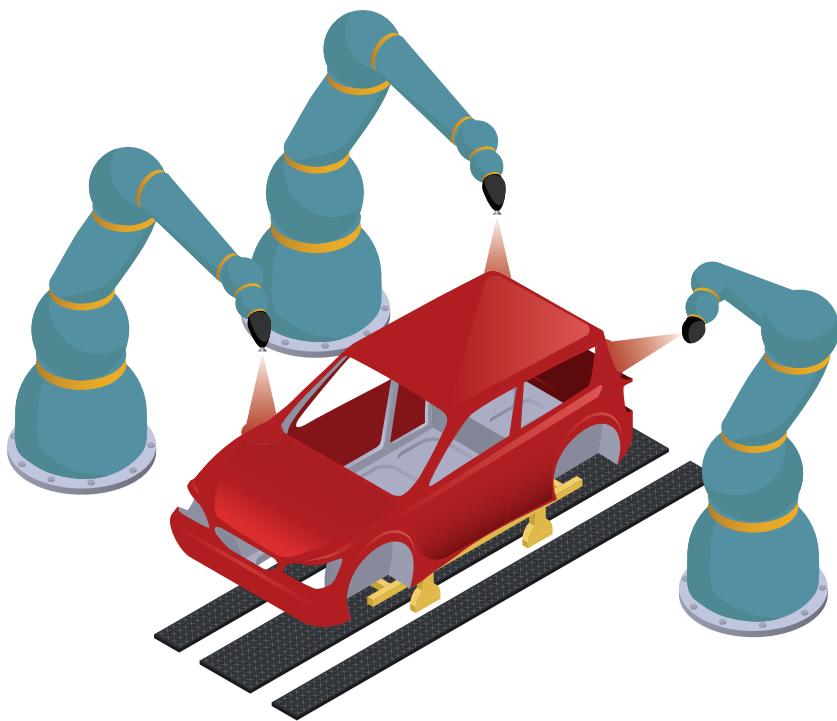
## Hire more contractors

Most automotive organisations employ contractors, taking advantage of [immediately available, in-demand skills](#). Why wouldn't you? It's assumed that i4.0 will warrant the hiring of more contract and freelance individuals, especially to bridge the gap between human skillsets and technical ones. Experienced contractors can serve as cost-effective mentors and trainers for your existing staff, providing a quick, short-term solution for your skills gaps.

[Talk to us about your contractor requirements.](#)

## Foster cultural change and support

Among the many steps that organisations should take, creating a culture which promotes and encourages learning and development is vital. This is particularly so, the [Deloitte report](#) advises, for enabling individuals to transition from different roles and industry sectors – from which it's predicted many new hires will originate. Allowing employees to continue to develop transferable



skills should stand everyone in good stead for the future. This can be used as an attraction tool for hiring the best automotive talent and also as a retention tool, ensuring employees can continue to develop the skills necessary to progress within the organisation.

## Implement HR policies to cover 'new' colleagues

The advancement and increasing use of robots has already prompted questions over how they should be regarded and **who they should report into** – if anyone. At a time when chatbots can already take care of the customer service element and apparently some companies are introducing 'AI members' to the board, it's clear that robots will become co-workers, not simply tools to better get the job done. It's happening

already: BMW cites **the example** of humans collaborating with robots on the installation of gearboxes to rail-suspended engines, where the machine does the manual work to support the employee. The distinction between what each party does is blurring.

This is a change that could prove difficult for some. To avoid any animosity, employers should create HR policies which reflect this transformation in the world of work and that can pre-empt and facilitate changes before they cause issues. Lines of responsibility will also need to be drawn, particularly if said robots are customer-facing.

## Help employees realise it's a good thing

Many commentators believe that i4.0 is a good thing, that it will - as previously mentioned - augment

jobs, creating more and better opportunities. It's important, therefore, that employers promote this stance, highlighting the benefits which the industry and its workforce can take advantage of. Help employees focus on the far more interesting and challenging tasks digitisation has freed them up for. Encourage continued learning and development. Change mindsets. Most of all, make sure everyone understands that while it appears scary, i4.0 is about human empowerment. Robots might provide information, but they don't possess the judgment, creativity or empathy required to create the solution. Humans do.

**i4.0 is about human empowerment**

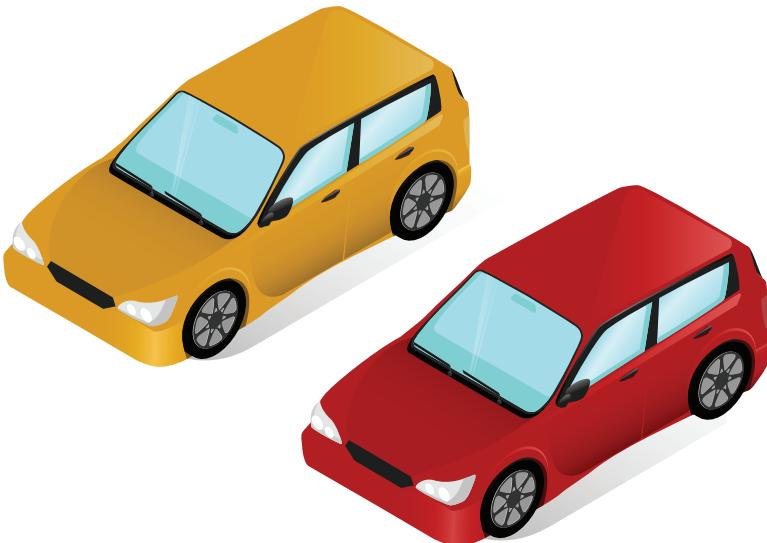
## Final thoughts

Human capital is always going to be important – it's abundantly clear, that the human skillset will be paramount as i4.0 (and probably i5.0) really comes into force. In automotive, what we should remember is that machines have been brought in to enhance human capability, enabling us to spend time on tasks which require more thought and creativity as opposed to those that are monotonous and repetitive. So while automation is making a massive difference in production, people are still very much at the heart of the automotive industry.

It's a sentiment succinctly put by **Siemens CEO, Joe Kesler**: "The fourth industrial revolution has never presented manufacturers with an either-or choice — robots or humans. It has always been about combining the talents of both. Ultimately, it is the convergence of artificial and human intelligence that will enable manufacturers to achieve a new era of speed, flexibility, efficiency and connectivity in the 21st century."

As far as jobs go, of course there will be huge adjustments to make, hearts and minds to capture, but ultimately, this is a time to get excited; is there any other industry which would be able to harness all the good that i4.0 brings better than automotive?

Enthused and empowered employees should help the automotive industry identify and profit from better opportunities in terms of newer services, real-time feedback and the ability to understand consumer preferences. Essentially, positive adoption of, and human collaboration with, the Fourth Industrial Revolution should cement the industry's long-term sustainability as not only the provider of goods, but as a sector which continues to enjoy delivering life-long, fulfilling and happy careers.



If you'd like to discuss any of the information in this article or chat to our specialist automotive recruiters about your requirements, please get in touch via our website or call the team on 02392 228228.

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