FOREWORDS

The Rt Hon Theresa May MP
The Rt Hon Philip Hammond MP
Alan Mak MP

AUTOMOTIVE & AUTOMATION REPRESENTATIVES

Continental Tyres
Bowler Motorsport
Ebild-Robotraders
MöllerTech
United Automation
V Installations
Coverzone
Optimal Industrial Automation
Terex Trucks
Durite
Burnsides
Phoenix Control Systems
P&S Automation
The Cartwright Group
RA Rodriguez (UK)

FEATURES

Review of the Year
Review of Parliament
This year’s Parliamentary Review follows a significant year in British politics. It was a year in which our economy continued to grow, as the Government followed its balanced plan to keep the public finances under control while investing to build a stronger economy. It was a year in which we began to deliver on the result of the EU referendum by triggering Article 50 and publishing the Repeal Bill, which will allow for a smooth and orderly transition as the UK leaves the EU, maximising certainty for individuals and businesses.

And, of course, it was a year in which the General Election showed that parts of our country remain divided and laid a fresh challenge to all of us involved in politics to resolve our differences, deal with injustices and take, not shirk, the big decisions.

That is why our programme for government for the coming year is about recognising and grasping the opportunities that lie ahead for the United Kingdom as we leave the EU. The referendum vote last year was not just a vote to leave the EU – it was a profound and justified expression that our country often does not work the way it should for millions of ordinary working families. So we need to deliver a Brexit deal that works for all parts of the UK, while continuing to build a stronger, fairer country by strengthening our economy, tackling injustice and promoting opportunity and aspiration.

In the year ahead we will continue to bring down the deficit so that young people do not spend most of their working lives paying for our failure to live within our means. We will take action to build a stronger economy so that we can improve people’s living standards and fund the public services on which we all depend. We will continue with our modern Industrial Strategy, deliver the next phase of high-speed rail, improve our energy infrastructure and support the development of automated vehicles and satellite technology, building a modern economy which creates the high-skill jobs of the future.

At the same time, work needs to be done to build a fairer society – where people can go as far as their talents will take them and no one is held back because of their background. So we will continue to work to ensure every child has the opportunity to attend a good school. We will continue to invest in the NHS and reform mental health legislation, making this a priority. And we will work to address the challenges of social care for our ageing population, bringing forward proposals for consultation to build widespread support.

So this is a Government determined to deliver the best Brexit deal, intent on building a stronger economy and a fairer society, committed to keeping our country safe, enhancing our standing in the wider world, and bringing our United Kingdom closer together. We will continue to put ourselves at the service of millions of ordinary working people for whom we will work every day in the national interest.

“The year’s Parliamentary Review follows a significant year in British politics”
It’s been a long road back for the British economy. In 2009 our deficit was at a post-war high, our economy shrank by 4.3% and millions feared for their jobs. Thanks to the hard work of the British people since then, we have reduced the deficit by three-quarters, we have been the second fastest growing G7 economy for the past two years, 2.9 million net new jobs have been created and our employment rate is the highest ever recorded.

By controlling our public spending, backing business and creating the environment for enterprise and investment to thrive, we have got the UK economy back on track.

But now we face new challenges. The deficit is down but debt is still too high. Unemployment is at a 40-year low, but real pay growth is stagnating. And I understand that people are weary of the hard slog of repairing the damage caused by Labour’s great recession.

All our progress could be put at risk if we listen to those who say we should abandon the economic plan that has brought us so far, just as we are coming to the final furlong. And it is up to all of us, in business and in Government, across every sector covered by The Parliamentary Review, to make the case, all over again, for a market economy, sound money and a system that incentivises enterprise and innovation.

So I will stick to the plan to bring the public finances back to balance, at a pace that supports the economy in the face of short-term challenges, and to make longer-term changes. I will pursue a Brexit outcome that puts jobs and prosperity first. And I will continue with my priority to build a productive and dynamic economy.

It is only by making sustained increases to our productivity that we can deliver the higher wages that will increase living standards and fund the improvement of our public services. That is why I announced the £23 billion of additional investment in infrastructure and innovation at the Autumn Statement last year, and why I launched an overhaul of our technical education system at the Spring Budget.

It is a good start, but there is more to do if we are to close the productivity gap with our competitors, and build a strong economy to provide opportunity, prosperity and the funding for public services that this country needs. I am determined to get on with the job.

This is how we can unlock the full potential of our economy and create an economy that works for everyone.

“We have been the second fastest growing G7 economy for the past two years”
British manufacturing has come a long way since the dark days of the mid-1970s, when the Government strategy of ‘picking winners’ failed disastrously.

Instead of modernising outdated businesses, Industry Minister Tony Benn sought to prop up loss-making companies.

At the same time, our rivals across Europe were evolving, as the first wave of computers and semi-automated machines changed working practices. In the early 1970s, Volkswagen were facing financial difficulties but, embracing these changes, they produced popular hatchbacks in the Passat, Golf and Polo which came to dominate the market.

In Britain, the same era was defined by the nationalisation of British Leyland, which became defunct in 1986. We need to learn the lessons of the 1970s, as breakthroughs in technology today present the same opportunities that the German automotive industry seized 40 years ago.

This Fourth Industrial Revolution has the power to create jobs and turbo charge our manufacturing industry. Juergen Maier, Chief Executive of Siemens UK, is carrying out a government-backed review of industrial digitisation alongside 200 British companies. He has predicted that by leading, innovating and adopting digital, Britain could achieve productivity gains of up to 25% and manufacturing sector growth of up to 3% – all delivering annual growth of approximately 0.5% of gross domestic product (GDP).

But in order to seize this opportunity we need a smart state – not a big Government ‘picking winners’ with poorly targeted investment.

Policymakers must create the conditions for innovation to thrive with investment and political backing — setting the direction of travel — but not dictating the detail. Ultimately, businesses and sectors have a responsibility to organise themselves for success too.

Our bold modern Industrial Strategy sets out a vision of how government can take advantage of new technology, and nurture a flourishing manufacturing industry without making the same interventionist mistakes of the past.

In Parliament, a new generation of cross-party MPs are also ready to take this agenda forward, ensuring we capitalise on the opportunities presented by the Fourth Industrial Revolution – especially as we enter a post-Brexit trading environment which can herald a new era of British manufacturing and exporting.

The UK is becoming a global leader in everything from battery technology and autonomous vehicles to artificial intelligence and precision engineering. We learned the lessons of the 1970s, and through a smart state backing new industries and nurturing innovation we can become masters of the Fourth Industrial Revolution driven by a national manufacturing renaissance.

"This Fourth Industrial Revolution has the power to create jobs and turbo charge our manufacturing industry "

Alan Mak MP
Chairman of the All-Party Parliamentary Group (APPG) on the Fourth Industrial Revolution (4IR)
Return of the Two Party System

The BBC's Andrew Neil gives his take on the state of Parliament following the June 2017 general election.

It was a year in which politicians learned not only of the power of a referendum to overrule the will of Parliament – but of its power to change the party system in which they operate. Nobody saw this coming. But, in retrospect, perhaps we should have, since we had the fallout from the Scottish referendum to guide us.

In the autumn of 2014 the Scots voted 55%-45% to remain part of the United Kingdom. That was supposed to settle the matter of Scottish independence for a generation, until some Scottish Nationalists began regarding a generation as no more than a couple of years. But in post-referendum elections to Holyrood and Westminster, it also recast the Scottish party system.

Remember, Scotland had been one of the first parts of the UK to throw off the British two-party system and replace it with a multi-party choice of SNP, Labour, Tory, Green, Lib Dem and even UKIP. But as the constitutional issue took centre-stage – and remained there even after the referendum – Scottish voters coalesced round a binary choice: for or against independence.

Thus was a new two-party system born of a centre-left Nationalist party (the SNP) and a centre-right Unionist party (the Scottish Tories). The other parties have not been completely obliterated, especially in Holyrood with its peculiar voting system. But by the general election of 2017 Scotland had become a battle between a dominant Nationalist party and a resurgent Tory party representing the Union. Two-party politics was back north of the border.

So we should have been prepared for something similar when Britain voted 52% to 48% to leave the European Union in the June 2016 referendum. At the time, we remarked on the power of referenda to overrule both the Commons (where MPs were 65% pro-EU) and the Lords (probably 80% pro-EU). What we did not see was how the Brexit referendum would reconfigure English politics just as the Scottish referendum had redrawn Scottish politics.

So we were taken by surprise for a second time. In this year’s general election – perhaps the single biggest act of self-harm a sitting government has ever inflicted on itself – almost 85% in England voted either Conservative or Labour. The English had not voted in such numbers for both major parties since 1970, when the post-war two-party system began to wane – and declined in subsequent elections to a point where barely 65% voted Tory or Labour, encouraging some commentators to think the decline terminal.

The referendum, however, reversed the decline. The Brexit vote ended the schism on the Eurosceptic Right as UKIP voters returned to the Tory fold; and those on the Left of the Greens and the Lib Dems flocked to Jeremy Corbyn’s more ‘Red Flag’ Labour offering. So, as in Scotland previously, two-party politics was back with a vengeance in England too.

But without one crucial element. Our historic two-party system regularly produced one-party government for the life of a Parliament. But our new two-party system has produced a hung Parliament with no party having an overall majority. This knife-edge parliamentary arithmetic means the smaller parties may be down – but they are not out.

The Conservatives need an alliance with one small party (Ulster’s DUP) to be sure of a majority. Even then, with the Tories and Labour divided over Brexit, no majority on any issue will be certain and on many votes the smaller parties will be pivotal in determining many outcomes.

So politicians return from their summer recess to a great parliamentary paradox: the two-party system has resurrected itself but rather than bringing with it the stability and certainty of the two-party politics of old, almost every major vote in the months ahead will be uncertain and unpredictable – and politics will be particularly unstable. Power will rest in Parliament. Government will be able to take nothing for granted. No vote will be in the bag until all the votes are counted. Westminster will have a new lease of life – perhaps even a spring in its step. Our democracy might be all the better for it.
Overview

The UK is ‘top heavy’ in services, with just 10% of gross domestic product (GDP) from manufacturing, although 68% of business research and development (R&D) is in manufacturing. While the 10% proportion is consistent with other G20 countries (Britain is the 9th biggest manufacturing economy), government recognises the need to diversify the economy. Increasing the number of profitable, high-tech manufacturing firms – often with well-paid jobs – is a good way. And with new technology and a more engaged media, the sector is being seen in a new way by a greater number of people and is losing its ‘oily factory worker’ stigma.

Technology, especially factory automation, is increasingly replacing lower-skilled repetitive jobs, meaning that more of the jobs that remain require engineering skills, soft skills and management and are more enriching and better paid than before.

However, many sectors and businesses still rely heavily on semi-skilled, lower-paid work to assemble and process products such as food and utility goods, and skilled specialist work such as car assembly, which is secure, is not highly paid. Brexit has boosted exports by devaluing the pound, however it has increased input costs for many firms which buy raw materials from Europe.

Generally, manufacturing as a sector has had a strong half year. The Markit/CIPS UK manufacturing Purchasing Managers Index (PMI), the widely-accepted barometer of manufacturing health, jumped to 57.3 in April from 54.2 in March – the highest level in three years. Forward to July and...
Industrial output has slipped. But, for industry, the UK is in stable and modestly-growing territory. Other countries are growing faster, though. ‘Everyone is looking at manufacturing. It is essential to take into context that much of the rest of the world is doing much better,’ says Engineering Employers’ Federation’s (EEF) Chief Economist, Lee Hopley. ‘Global growth forecasts for many countries are ahead of ours.’

In January, the Government launched proposals for ‘a modern industrial strategy to build on Britain’s strengths and tackle its underlying weaknesses to secure a future as a competitive, global nation.’ A systemic weakness in the manufacturing base and the economy restrains the levels of exports. Total exports of goods and services in 2016 were circa £550 billion, with manufacturing comprising 45% of this.

Industrial Strategy

The Industrial Strategy, the detail of which is expected to come in the 2017 Autumn Statement, is designed to thread together current government and industry investments across research, industry, skills development, energy and infrastructure. It is also expected to include new ambitious plans in areas such as digitisation, robotics, artificial intelligence and energy storage, and stitch these together into a single, cogent national strategy.

It has 10 pillars, ranging from investing in science, research and innovation to rebalancing growth across the whole country, by providing development funding for big infrastructure upgrades such as the Midlands Rail Hub and Northern Powerhouse Rail.

‘The Industrial Strategy is crucial,’ says Terry Scuoler, Chief Executive Officer of the manufacturers’ organisation, the Engineering Employers’ Federation (EEF). ‘Currently the economy is on an even keel and manufacturing is quite robust. While the sun is shining you fix the roof, and Government has seen we have to do it now,’ he emphasises.

The strategy is full of good things, of which industrialists across the board, from the silver-haired director to the 20-something design engineer, will approve. Few would argue with its top pillar: investing in research and development (R&D) and developing skills.

It says skills shortfalls in some parts of the country contribute to imbalances in productivity in the UK, as shown in a recent Confederation of British Industry (CBI) report, highlighting education and skills as the biggest determinants of regional variations in productivity. It pushes for more and better technical training.

In the Budget, the Government announced new money for technical education to fund the new T-Level qualification for technical education. The Government said it was ‘the most ambitious post-16 education reform since the introduction of A-levels.’
Scuoler says of the Industrial Strategy ‘Politicians are becoming more aligned with industry and its needs. Catapults are being seen as valuable and effective. They are reaching more SMEs, and while they can never reach them all, the innovation ecosystem that Catapults and Innovate UK represent are helping SMEs, not only big companies.’

The automotive sector and the Industrial Strategy

Announced in January, one of four early sector deals in the Industrial Strategy – covering digitalisation, automotive, nuclear and life sciences – Richard Parry-Jones of the Automotive Council will lead work to accelerate the transition of car manufacturing to ultra-low emission vehicles (ULEVs).

The step change to ULEV involves several technologies and industry expertise, for design engineering and manufacturing. The two biggest areas are battery technology/electric powertrains, and lightweighting. A multitude of research in both disciplines is taking place in 2017 at British universities and car companies, while Britain’s prospects of playing a key role in the ULEV revolution were given a huge boost with BMW’s confirmation it will be the manufacturer of the new MINI electric.

The focus on ULEVs in the Industrial Strategy was followed in June by carmaker Volvo announcing it will only offer hybrid or electric cars by 2020, the first mainstream car original equipment manufacturer (OEM) to pledge this. Then, in late July, the Environment Minister, the Rt Hon Michael Gove, announced the Government will ban the sale of new diesel and petrol cars and vans from 2040 in a bid to cut air pollution. However, environmental groups said the proposals did not go far enough.

Jaguar Land Rover (JLR) and Warwick Manufacturing Group (WMG) at the University of Warwick are to form a partnership to carry out electric car research after WMG was awarded £5.7 million by the Engineering and Physical Sciences Research Council in July. JLR recently unveiled its first battery electric vehicle, the Jaguar I-PACE Concept, which will be on the road in 2018.

Also part of WMG’s car electrification research, the Energy Innovation Centre is a new battery research and testing facility that was fully booked and hired more staff in 2017. However, the opening of WMG’s National Automotive Innovation Centre, a £300 million large-scale manufacturing test bed for next generation cars with electric and hybrid powertrains, has been delayed until 2018.

One automotive institution devoted to new and low carbon-power technology is the Advanced Propulsion Centre (APC). It is having a good year. Garry Wilson, Director of Business
Development at the APC, says ‘Since the APC was set up in 2013, we have facilitated investment of over £520 million into more than 30 innovative projects involving more than 120 organisations – safeguarding or creating more than 19,000 jobs and saving 27 million tonnes of CO₂.’

In the first half of 2017, the APC awarded £62 million to seven pioneering British projects, led by organisations including Jaguar Land Rover, Williams Advanced Engineering and BMW Motorsport. It also made up to £35 million available to UK innovators through its eighth grant funding competition. ‘The APC has also funded a project that will see 20 plug-in hybrid Ford Transit Custom vans trialled in London throughout the year, an important step in improving the air quality in cities,’ says Wilson.

However, the shift to low-emission vehicles is not without controversy. Researchers are calling for the introduction of energy rating labelling for all motor vehicles, after it was revealed that green regulations are misleading customers about the environmental benefits of lightweight aluminium engines.

Cranfield University found that a typical car with an aluminium engine would need to be driven for between 185,000km and 560,000km before any emission reductions were made from lower fuel use.

Automation and productivity

In Britain, the low use of capital equipment compared with many competing countries is well documented.

For fixed capital investment, the UK has ranked in the lowest 10% of all Organisation for Economic Co-operation and Development (OECD) countries for 16 of the last 21 years. It has also invested on average 2–3% of gross domestic product (GDP) less than France, Germany and the US. In the adoption of the previous industrial revolution of automation, or Industry 3.0, again the UK scores low. For example, the 2016 IFR world robotics report identified that the UK has 33 robots per 10,000 employees (excluding automotive), compared with France at 75 (nearest comparator) while Germany leads Europe at 170/10,000.

This low investment in automation and digital technology, is one reason why the UK economy has frustratingly low productivity compared with our peer group, even though many manufacturing businesses are productive due to structural and cultural reasons such as the successful adoption of lean manufacturing techniques. In recent years, the UK has also slipped behind in the race to move to an Industry 4.0 or 4IR system of manufacturing, where technology can be more responsive and enable the business demands of the future, such as the mass personalisation of goods. Adoption of such technology is particularly low among SMEs.
This situation – low-technology adoption but devotion to lean practices – in the UK has been identified by the leadership team producing the Industrial Digitalisation Review (IDR), a big component of the Industrial Strategy Green Paper, as a huge opportunity for Britain. The draft IDR says ‘we see an opportunity for the UK to differentiate itself in this digital industrial revolution.’

‘The relatively flexible and competitive UK labour market has allowed many companies to achieve world class productivity at lower levels of automation. This will provide an even stronger competitive advantage with Industry 4.0 technologies like ‘Cobots’, where humans work in harmony with advanced technologies to create highly agile businesses attuned to the changing needs of their customers.’

Culturally, it seems, the British workforce can ‘do automation’ and smart factories, but historically it has not wanted to spend the money on it. Regardless of whether or not UK factories are behind or ahead, there is a very compelling business case to adopt digital technologies. The IDR also says ‘It has been recognised that by leading Industrial Digitalisation, the UK has the potential to realise industrial efficiency gains of up to 25%, manufacturing sector growth of 1.5–3%, delivering annual growth of approximately 0.5% of GDP. A recent survey KPMG conducted on behalf of the Society of Motor Manufacturers and Traders, identified the cumulative single sector benefit of automotive digitalisation at £74 billion by 2035.’

The review also claims that the faster adoption of industrial digital technologies (IDT) can become a key driver of improved productivity, global competitiveness and increased exports. A study by Boston Consulting said that by fully applying these technologies over the next decade, UK industrial production would be up to 30% faster and 25% more efficient. One key gain from digitalisation is the potential to move manufacturing back to the UK from low-wage economies.

A core subject for the future of manufacturing is jobs. Mass scale automation and digitalisation has had the reputation as a job destroyer. ‘People, culturally, don’t like investment because they perceive it will remove jobs. But if you don’t invest, people will lose their jobs as the plant shuts down because it’s not efficient,’ says Victoria Montag, Sector Head, Industrial Automation at Gambica. Gambica is the UK trade association for the industrial automation, control, instrumentation and lab technology sectors, and is heavily involved in developing the IDR.

Jobs, pay, work and pensions

Engineering Employers’ Federation’s (EEF) annual Manufacturing Fact Card shows that pay within the sector continues to outpace services and the whole economy average, being up 1.9% (2015 vs 2014) or 3% compared to 2013. Average pay in the manufacturing sector in 2016/17 is £31,489, in services it is £26,825, and £27,607 is the average for the whole economy.

Unite, Britain’s largest manufacturing union, says that employees in the private sector over the last two years have suffered the same downward pressures on pay as experienced by those in public services such as the NHS, where the majority of health staff have seen their pay in real terms eroded by 17% since 2010. Cases such as the recent multi-year pay deal on behalf of over 2,000 workers employed
at luxury carmaker Bentley are the exception rather than the norm.

Weak demand in the economy is not helped by below inflation pay deals – or no rise at all – as the Consumer Price Index (CPI) rate of inflation stands at 2.6% (July 2017). Wages are badly lagging behind inflation, Unite says, while Stock Exchange performance, at recent record highs, suggests big companies have the necessary cash reserves.

However, the majority of private sector jobs come from small and medium-sized enterprises (SMEs). The Federation of Small Businesses says 60% of all private sector employment in the UK is from SMEs and in manufacturing it is thought to be much higher.

The state pension age was due to increase to 68 between 2044 and 2046. Under new proposals that have to be agreed by parliament, this will move forward to between 2037 and 2039. The Government did not include this proposal in its General Election manifesto.

Unite claimed the increase in the retirement age meant that workers would be paying for failed economic policy under the Conservative Government. It says raising the state pension retirement age to 68 between 2037 to 2039 will be detrimental to workers, especially if you have a physically-demanding job or are suffering ill-health, and they called for this proposal to be reversed.

Unite Assistant General Secretary for Manufacturing, Tony Burke, said ‘Brexit dominates economic and fiscal policy.

‘As a union, we are seeking a ‘Jobs First’ Brexit where every aspect of the negotiations is set against whether this will create secure and well-paid employment in a country with a strong industrial base. To this end, we are calling on Business Secretary, Greg Clark, to put flesh on the bones of the Government’s industrial strategy.’

The Apprenticeship Levy

Government knows Britain needs to increase its technically-trained workforce. The Industrial Strategy green paper says ‘We had a record 2.4 million apprenticeship starts in the last parliament, and we are on track to deliver a further 3 million by 2020, with closer links to employers through the new apprenticeship levy.’

Opting for the stick over the carrot approach, the Apprenticeship Levy came into force in April this year. It affects employers with an annual pay bill of £3 million or more who are now required to pay effectively a tax at 0.5% of their pay bill. An apprenticeship allowance of £15,000 offsets the levy. This gives employers an incentive to offer apprenticeships, to both train their staff properly and qualify for the allowance.

While many manufacturing employers understand the logic of the system, the imposition of extra business costs was far from popular. ‘[Employers] understand a need to build a talent
pipeline,’ says Engineering Employers’ Federation’s (EEF), Terry Scuoler. ‘They take apprenticeship training seriously; it did not need a levy.’

In Bob Bischof’s submission on apprenticeships to London First this year it said ‘The Government in England has tried to standardise apprenticeships somewhat following our submission and differentiates now into intermediate (level 1 and 2), advanced (level 3) and higher apprenticeships (level 4–5). The latter, which is the basis for the SEMTA higher apprenticeship for engineering technology in our opinion [German Industry UK and the German British Forum] goes too far in terms of an apprenticeship, but still lacks educational and commercial content. The intermediate apprenticeship hardly deserves the name. The advanced apprenticeship is the nearest to European standards. The attainment rates are shockingly low.’

The researchers for London First believe that attainment levels for some apprenticeship courses can be as low as 10%.

According to university admissions body UCAS there has been a drop in undergraduate applications for all degrees from both British and EU students in 2017. The number of applications from overseas students for post-graduate engineering courses has also fallen in the past year. Partly in response to university tuition fees of up to £9,000 per year and sub-optimal application rates, degree apprenticeships are a new and growing route through employment and higher education.

The small number of degree apprenticeships currently being delivered is expected to increase substantially over the next couple of years, says Henriette Fordham at the Higher Education Funding Council for England (HEFCE). Many higher education providers, including universities, further education colleges and private providers, are developing programmes based upon the increasing number of degree apprenticeship standards. Several institutions have been provided with funding through the Degree Apprenticeship Development Fund to develop new provisions to be delivered from the academic year 2017/18.

‘While they do not involve a financial cost for the apprentice, they do involve working in paid employment for the majority of the week and, as a route towards a higher education, qualification they can be challenging,’ says HEFCE’s Fordham. ‘We expect them to complement traditional higher education routes, which will continue to appeal to potential students, but as employers look to spend their available levy funds on opportunities to develop their existing workforce and recruit new skilled staff we expect that an increasing number will consider degree apprenticeships as one of a variety of options.’
Digitalisation

From BMW’s MINI to B&W Speakers, from GlaxoSmithKline to the £2 million contract pharmaceutical manufacturer, from Southampton to Aberdeen, companies are using more digital technology to find business efficiencies.

Sometimes this can be a simple IT upgrade, sometimes it can be a multi-million pound, fully-automated production line. Very gradually, and mainly at large companies, the UK is moving towards an industrial base that will be using cyber physical systems, digital twins and machine learning, where humans intervene very little and machines and products talk to each other, navigating autonomously around the factory and where personalised mass production can be a reality. This process, which has several names including Industry 4.0, 4IR, smart factory and connected factories, has become an obsession with supporters of manufacturing, business groups and the manufacturing trade press.

As part of the Industrial Strategy, the Government initiated the industrial digitalisation review, or IDR, led by Jürgen Maier, Chief Executive Officer of Siemens UK and Ireland. Maier says ‘Our review is about defining how the UK can best adopt radical new technologies that will boost productivity and create new high-tech jobs across manufacturing and industry. We want the end result to be a sector deal for manufacturing that makes a real difference to companies regardless of their size or market.’

‘It is not yet too late for the UK to take the global lead in this space, but we are in danger of falling behind if we do not take up the challenge now. So our aim is to position UK manufacturing and industry at the heart of a new global industrial revolution much like it was over 170 years ago when we [Siemens] first started doing business here.’

By late July the IDR had directly engaged with over 200 companies. The IDR team will now submit the proposal as part of a sector deal by the end of July. This will be negotiated over the summer recess, then – providing Government reaches an agreement – made into policy in the autumn. The details of the IDR are expected within the Industrial Strategy in the Autumn Statement.
Imagine a world with zero accidents, injuries or fatalities on the road. A bold ambition that Continental and its five divisions in the UK are working toward as one of the top automotive suppliers.

There’s no avoiding the uncomfortable truth there are still 1.24 million people killed globally on roads every year – pretty much one person every six seconds. In the UK that’s almost five fatal road accidents a day.

These accidents place huge pressures on our road network and emergency services. Increasingly we are looking to technology for solutions to limit such incidents whilst also educating motorists.

The Vision

Continental’s ‘Vision Zero’ initiative comes from a business that makes everything on a car other than its shell, right down to the sole contact point with the ground, tyres.

The premise is simple; through Continental’s know-how and safety systems, our road networks should see zero accidents, injuries or fatalities. The vision aims to address all those active on our roads, from drivers to fleet operators, to safety bodies and cyclists.

Continental systems are helping to make this vision a reality. From premium tyres to automated vehicles and safety systems, Continental believes in transporting people safely, whatever the mode of transport – from cars to trucks and the mixed operating spaces with pedestrians and cyclists. Continental now plays a key role in educating all these groups at the UK’s biggest cycling event, Prudential RideLondon.
Vision Zero is anchored in the company’s corporate strategy. Its CEO, Elmar Degenhart, states publicly that accidents belong in the past; an ambition to which all road users can relate.

**Tread carefully**

Continental is known fundamentally as a tyre business and this plays a significant part in Vision Zero. The contact patch of a car tyre is similar in size to a postcard, so the safety implications are huge. Currently it’s estimated an astonishing 10 million tyres on British roads could be illegal and dangerous.

With 1.6 mm the legal limit for car tyre tread depth, tests show that tyres at this level are only performing at 55% efficiency, meaning stopping distances are greatly increased in wet conditions.

As part of Vision Zero, Continental recommends the optimum time to replace worn tyres is when the tread depth reaches 3 mm, as this provides a responsible compromise between safety, economics and driver confidence. Many government vehicles and emergency services already change at 3 mm because of such safety concerns, so it is surprising that more motorists are not made aware of this.

Not only are drivers unaware of the safety issues of tyres at 1.6 mm, but two thirds of UK motorists admit to not knowing that this is the legal limit. Through frequent consumer engagement, Continental raises awareness about this important topic.

**Market**

Over the last 145 years, Continental has helped shape the automotive landscape. The UK is a leading market for innovation and Continental is uniquely placed to support all mobility solutions. UK Continental business units are diverse, from tyres to brake systems, interior electronics, chassis components and marine hoses, employing over 500 people with this combined vision.

**Commitment**

As a business, Continental strives to improve road safety for all forms of transport. Across the UK, commercial vehicles operating with Continental’s ContiPressureCheck Tyre Pressure Monitoring System (TPMS) allow fleet managers to monitor tyre pressures automatically and prevent dangerous blowouts and roadside tyre breakdowns. Suddenly, coned off motorway lanes for tyre changing are a thing of the past.
A partnership with the Global New Car Assessment Programme (NCAP) through its ‘Stop the Crash’ campaign has further enhanced Continental’s status as a leader in automotive technology and safety. At the London Motor Show Continental brings safety to the streets, educating motorists about the simple tyre safety checks all drivers should undertake, whilst highlighting its latest safety systems such as Autonomous Emergency Braking (AEB). In 2017 over 1,200 drivers experienced first hand the impact of safe tyres and AEB technology during live demonstrations. This highlighted Continental’s commitment to consumer engagement and how such safety systems can help contribute to its Vision Zero initiative.

Within the tyre industry itself, Continental is a founding member of TyreSafe, an industry body with a longstanding commitment to raising consumer awareness around defective and part-worn tyres on our roads. Driver education plays a key part in this and over the last 10 years Continental has worked to raise awareness of tyre safety month and the simple checks all motorists should regularly undertake, such as checking tread depth and tyre pressures.

Part of this approach relates to changing attitudes, achieved through driver research and consumer activity. As a ‘Partner in Excellence’ at Mercedes-Benz World, Continental has educated over 1,000 motorists on the differences between summer and winter tyres. We share a passion for safety with all car manufacturers, which is why one in three cars manufactured in Europe leaves the factory fitted with Continental tyres.

In 2017 and 2018 Continental is travelling the country to deliver Vision Zero Live, educating the trade, media and consumers on the importance of tyre safety, as well as technology and promoting wider road safety. This significant investment by the brand typifies its belief in a safer road network through education and driving experiences.

Locally, Continental has also started to work with the University of Oxford in the field of artificial intelligence, aimed at developing vehicle systems for future application in autonomous driving, supporting Continental’s long-term vision for safer roads through the use of pioneering research and technologies.

This focus has also contributed to industry recognition, with Continental winning Tyre Manufacturer of the Year 2017 by trade journal Tire Technology International.

Through its commitment, Continental can imagine a world with zero accidents, injuries or fatalities. An ambition that Continental has set out at a global level, with its UK business playing a pivotal role. Working with safety bodies and governmental departments, Continental sees driver education as vital in this road map. Through educating all who use our busy road network, the leading automotive supplier truly believes in a safer road ahead for all.

“Continental is more than tyres as we develop pioneering technologies for safe mobility”
Bowler Motorsport

Bowler is the original UK manufacturer of dedicated off-road competition cars. Started in 1985 by Drew Bowler, the company is now one of the best known and most successful manufacturers of rally raid cars in Europe. This competition experience is now creating opportunities in the military and emergency services sector where speed, agility and reliability are very desirable attributes.

Bowler vehicles have always been based on Land Rover componentry and have evolved in parallel with the Land Rover product range. This is a unique relationship and a clear unique selling proposition (USP) for Bowler.

Bowler employs 35 full time staff in Belper, Derbyshire, for the development, design and manufacture of race and road cars. It has secured private and public sector funding to grow and exploit the new military and civilian opportunities it currently has.

Bowler’s latest model, the Bulldog, and its revolutionary in-house designed Cross Sector Platform (CSP), has the potential to fill a gap in the market for low-volume, purpose-built, vehicles across all race, road, utility, military and emergency service sectors.

CSP: Cross Sector Platform

In September 2014, discussions with the United Kingdom Department of Trade and Industry (UKTI), DSO – Defence Services Organisation, Foreign and Commonwealth Office (FCO), serving officers and individuals from the civilian security and close protection sector highlighted the desirable characteristics for a vehicle designed to fill some of the many roles that were previously undertaken by the Land Rover Defender.

“This small Derbyshire-based company is internationally recognised as producers of some of the best rapid and agile all-terrain vehicles available”
Bowler’s FEA Finite Element Analysis (FEA) optimised the CSP concept from a clean-sheet design, drawing on knowledge gained over three decades of competition and the technical partnership with Jaguar Land Rover. CSP aims to offer a virtual Meccano assembly method, incorporating the strength and lightness of monocoque construction and the simplicity of ladder-frame construction with the versatility of spaceframe construction, plus improved operator ergonomics, speed and agility over any terrain. Reliability, ease of service and repair and being air transportable are among other key considerations.

The CSP vehicle is not a Defender replacement but it is designed to fill many roles where the Defender was traditionally used.

The CSP design and manufacturing concept uses simple construction methods and materials to produce bespoke ultimately variable platforms with simple tooling producing a lightweight, robust and easily repairable structure, using readily-available high-grade steels.

Engineered to accept a range of engines, it offers a variety of wheelbases, tracks and drive configurations and can accept payload requirements of between 500kg and 2000kg, with a gross vehicle weight (GVW) of up to 4000kg.

**BOWLER MOTORSPORT’S 32-YEAR HERITAGE**

» 1985 – Drew Bowler begins making and selling competition cars from his home in Derbyshire and Bowler Motorsport begins. The 88” wheelbase Tomcat is a popular car for UK national trial and hill rally events, and Bowler begins to sell into Europe

» 1991 – Drew Bowler wins the ARC National Comp Safari in a Tomcat and begins to develop it

» 2000 – Bowler competes in the world-famous Dakar Rally in Africa for the first time and races in central Europe with the Wildcat that evolves and becomes popular with privateers and small teams as a reliable, fast and robust car

» 2005 – Bowler’s largest ever Dakar entry means it’s the second largest factory team after Mitsubishi and has the highest rate of finishers. A Bowler Wildcat wins both the British Baja National Championship and the French Baja

» 2008 – Richard Hammond declares himself a ‘driving god’ in a Bowler Wildcat and Bowler builds the Nemesis, while developing the EXR. The Bowler EXR-S is revealed at the Goodwood Festival of Speed and is driven up the hill in the Supercar class – beating many supercar rivals

» 2012 – Bowler agrees a formal brand partnership with Land Rover across sponsorship, marketing and engineering and begins development of the Defender Challenge

» 2016 – The Defender Challenge grows with more teams and more rounds, the Defender Challenge rally kit is launched and development of the CSP-based Bulldog begins. Company founder Drew Bowler sadly passes away in November

» 2017 – A new senior management team is formed to continue developing Bowler with the desire and passion of which Drew would have approved. Development of the CSP platform via the prototype Bulldog rally car enters motorsport and hot-climate testing while developing other CSP platform variants for the civilian and military sectors
All CSP vehicles will have common and simple electrical architecture and drivetrain, plus consistent spares support and servicing knowledge. There is also the option of overseas manufacture/assembly.

The CSP is the basis of Bowler’s cycle plan for the next six to eight years, and has required the firm to completely rethink the way it operates, implementing a process and way of working that some would previously consider impossible. Bowler has been granted a patent on the chassis design and manufacturing process and has secured funding from the Government-backed Automotive Manufacturing Supply Chain Initiative (AMSCI) via the Society of Motor Manufacturers and Traders (SMMT) to develop and produce the platform.

Bowler, a company producing all-terrain vehicles with a proven pedigree of performance and reliability, based on results spanning over 25 years in off-road motorsport.

Bulldog

The Bulldog rally car is the first variant – just one version of the (CSP) concept. Bowler knows that racing improves the breed and is using motorsport as one of the stages of development to prove that its concept works under the harshest of competition conditions. 3.0-litre Land Rover turbodiesel V6-powered Bulldogs lead Bowler’s official return to international level competition in 2017.

The Morocco desert-based Tuareg Rally in March was used as the first test venue. The Bowler development cars finished sixth, eighth and tenth. On the fifth day of the event the testing limitations were lifted on one of the Bulldogs and it became the fastest car of the day by a margin of over four minutes.

The Bulldog’s current Defender-based body panels were chosen purely for the sake of simplicity, availability and anonymity, enabling its inclusion in a test programme within home and international rally events. Under the skin, it’s actually far more Range Rover than Defender. With independent coil-sprung suspension, bespoke subframes, brakes, steering and with Jaguar Land Rover (JLR) power units and driveline components. Concentrating on what Bowler are best at: strength, robustness and chassis design, the idea is that any body type could sit on the platform, depending on customer need.

The potential for the platform, which is arguably the most important new Bowler design since the 1999 Wildcat, is huge. CSP’s unique technology means it can be assembled in an infinite number of ways: any wheelbase length or width; any number of axles; for any application. One-offs can be made cost-effectively. Bowler is already looking actively at other uses and permutations, including a 6x6 version, live axles, higher payloads and forward controls.

BOWLER BULLDOG CSP SPECIFICATION

- Engine 2993cc single-turbo JLR TDV6 turbodiesel
- Power and torque 300bhp and 500 lb ft approx
- Transmission ZF 8HP70 eight-speed automatic with semi-automatic mode, two-speed transfer box, limited-slip differentials front and rear
- Independent suspension front and rear, bespoke front and rear subframes, anti-roll bars and two-stage hydraulic bump stops. Coil springs with remote reservoir dampers
- JLR electric power-assisted rack-and-pinion steering
- JLR vented brake discs front and rear
- Weight 1800kg approximately

The Bulldog rally car is the first variant – just one version of the (CSP) concept. Bowler knows that racing improves the breed and is using motorsport as one of the stages of development to prove that its concept works under the harshest of competition conditions. 3.0-litre Land Rover turbodiesel V6-powered Bulldogs lead Bowler’s official return to international level competition in 2017.

The Morocco desert-based Tuareg Rally in March was used as the first test venue. The Bowler development cars finished sixth, eighth and tenth. On the fifth day of the event the testing limitations were lifted on one of the Bulldogs and it became the fastest car of the day by a margin of over four minutes.

The Bulldog’s current Defender-based body panels were chosen purely for the sake of simplicity, availability and anonymity, enabling its inclusion in a test programme within home and international rally events. Under the skin, it’s actually far more Range Rover than Defender. With independent coil-sprung suspension, bespoke subframes, brakes, steering and with Jaguar Land Rover (JLR) power units and driveline components. Concentrating on what Bowler are best at: strength, robustness and chassis design, the idea is that any body type could sit on the platform, depending on customer need.

The potential for the platform, which is arguably the most important new Bowler design since the 1999 Wildcat, is huge. CSP’s unique technology means it can be assembled in an infinite number of ways: any wheelbase length or width; any number of axles; for any application. One-offs can be made cost-effectively. Bowler is already looking actively at other uses and permutations, including a 6x6 version, live axles, higher payloads and forward controls.
The world of factory automation is complex and fast moving. Optimal was set up to enable manufacturers to automate their plants using the most up-to-date technologies. From our early days, working in the food sector we quickly progressed to highly-regulated sectors, such as pharmaceuticals and aerospace. We built up the Optimal team to provide a full service to our clients from initial conceptual design, through full hardware and software specification to build, installation, testing and post-sales support. Our current team consists of some 70 people working from purpose-built premises in Bristol.

Pharmaceuticals – an industry in transition

Since our first contact with pharmaceutical manufacturing in 1989, the industry has been undergoing a slow but seismic change in the way it produces medicines. As with all sectors, change has involved the use of automation equipment and techniques such as Programmable Logic Controllers (PLCs), Distributed Control Systems (DCS) and Supervisory Control and Data Acquisition (SCADA). Optimal has been instrumental in designing and installing these for many of the major companies and have worked closely with the major equipment suppliers such as Siemens, Rockwell and Emerson to deliver the cost-effective, high-quality manufacturing solutions that our customers demand.

Before any pharmaceutical product can be released to a patient, regulatory bodies such as the European Medicines Agency (EMA) and the American Food and Drug
Administration (FDA) enforce stringent controls on manufacturers to ensure that all drugs produced meet acceptable specifications and are safe and effective for patients. Traditionally, this process has been done by carefully validating the production process, then ensuring that process never changes. Whilst this method has provided safe and effective drugs for many years it is not an ideal methodology for several reasons including:

- Input materials can change over time, possibly affecting the final product
- All drug batches must be quarantined and tested before they are released
- Manufacturing methods are ‘Set in stone’. Improvements cannot be made without re-registering the product (a costly and time consuming procedure).

For these and other reasons the pharmaceutical industry is moving towards the use of sophisticated real time analysis techniques (such as Near Infra-Red and Raman Spectroscopy, Particle Size Distribution analysis etc.) to monitor the product rather than just the process. These techniques are known generically as Process Analytical Technology (PAT).

What is PAT

PAT can be summed up by the definition produced by the FDA in 2004 (Ref: PAT – A framework for innovative pharmaceutical development, manufacturing, and quality assurance).

There are a number of substantial gains to be made by embracing PAT in pharmaceutical manufacture instead of traditional validation methods. These include:

- At all stages of the manufacturing process the product can be monitored to check that critical characteristics are maintained at the highest quality
- Manufacturing methods can be optimised by obtaining real time quality feedback
- Process improvements can be implemented easily and quickly
- The need for quarantine and testing of the product is reduced or even removed. Real Time Release (i.e. product is manufactured and shipped directly to market) becomes a reality.

Thus, PAT is now being introduced by all the major pharmaceutical manufacturers worldwide.

What has this got to do with Optimal?

There are a multitude of challenges when introducing any PAT-based manufacturing system, not least how to handle the vast volumes of data being generated by new instruments. This is where Optimal’s PAT Data Management tool, synTQ, is used.

Typically, even very simple PAT-based processes require data integration from several disparate sources such as:

- Configuration, control and data acquisition from many spectral and univariate instruments from different suppliers
» Data exchange with sophisticated multivariate analysis software packages

» Data exchange with control devices such as PLCs, DCSs and SCADAs.

synTQ is rapidly becoming the industry standard PAT implementation tool by allowing a process scientist to easily and quickly design a workflow to carry out all these tasks and save it in a secure database. These workflows then form the central core of any PAT process. The production process can then be controlled automatically by synTQ and the resultant data saved in the same secure database. We have a proven track record of successful real world installations and synTQ has been adopted as the standard PAT data management tool by many leading manufacturers.

What’s ahead?

Current pharmaceutical manufacturing is largely batch based whereas modern manufacturing philosophy is moving more and more towards continuous methods. Whilst the challenges involved in designing and running a robust continuous pharmaceutical manufacturing line are substantial, Optimal and synTQ have already played a significant role in helping several leading pharmaceutical manufacturers to move from batch to continuous manufacturing with stunning results. Some have reduced manufacturing times from 30 days to 90 minutes. This technology need not be limited to just pharmaceutical manufacturing – it is equally applicable to any process.

The future of Optimal looks very positive with the demand for traditional batch processing as well as continuous processes seeming to be very healthy at present. Additionally, we are very proud to be part of a movement which is enabling process industries to be at the forefront of manufacturing technology, in turn delivering higher quality and lower cost products to consumers around the world.

“synTQ is rapidly becoming the industry standard PAT implementation tool”

Continuous pharmaceutical manufacturing line
The manufacturing industry today is vastly different from how it was in the 1980s. In particular, the car making industry has seen major technological changes. What we see when we visit a car showroom in no way reflects the amount of work planned, designed, manufactured and installed in car plants throughout the world. We buy our cars based on reliability, price, economy and style with absolutely no idea how they are put together and with no knowledge of the absolutely enormous investment and know-how that motor manufacturers and their suppliers possess.

Fortunately today, an army of robots and automated equipment around the globe has enabled mass production of vehicles on a scale previously never seen before. Robots have changed the world in a positive manner, not just in car making but in all areas of industry. Whatever you eat today has more than likely been packaged and palletised by robots, and even surgery is now carried out by ‘collaborative robots’ that mimic human arm movements. Without doubt any production vehicle built on a production line that you drive today will have been almost entirely manufactured and assembled by robots.

Our story started in the 1980s at a time when robots were first being used in the car industry. The future Managing Director, Jamie Gustard, was then a time-served mechanical technician and had been working at a local Luton machine tool manufacturer that actively built and installed robot-automated production lines. It was here that he gained the experience and knowledge required to start Ebild-Robotraders some years later.
Today the company supports many businesses worldwide by providing technical resources and robot-automated equipment across a range of industries from car assembly and the welding and handling of components to food packing and stacking of goods on pallets. By providing robotic automation to our customers we have enabled them to reduce their costs and improve quality while also speeding up the process of manufacture. We provide a comprehensive package that includes providing our customers with new and second-hand robotic equipment. Whether as an individual robot or part of a complete working installation, customer training and after sales support is integral to ensuring that the customer is fully competent, both in operating and maintaining the equipment after the project is completed.

More recently we have invested in a Siemens ‘Process Simulate’ design and programming software system so as to be able to support our customers. ‘Process Simulate’ allows us to ‘build’ the complete production line in the virtual world. This means that all of the equipment that is to be installed, will be fully designed and tested prior to, or during, the installation period. As well as confirming all of the technical solutions, the required operational cycle times can also be verified.

The overall benefit of this new technology is to offer customers greater productivity due to less down time, increased production hours and improved accuracy and repeatability which is crucial for many of today’s high-tech processes. It also enables any further changes to the process, to be carried out off-line without affecting on-the-job programming changes – thereby removing the workforce from dangerous or hazardous processes and improving their personal health and safety. This gives a huge advantage to the line-builder as improvements can be made to equipment while production is being run; any changes can then be implemented outside of production with reduced risk and the customer can have complete satisfaction that all of their equipment will meet the required criteria before and during its commissioning period.

We have a team of dedicated robot programmers, robot technicians and process engineers who can support our global customer base. These customers are the most important part of our business and our aim is to try to develop a working relationship with them rather than the outdated buyer and seller philosophy. To complement these skills we also have a team of robot technicians who can repair and refurbish second-hand robots in our own workshop. Refurbished robots are an affordable solution for customers who have short-term contracts or for customers who need a lower level of investment as they take their first steps into automation. To ensure the smooth day-to-day running of any business, skilled management is crucial and our managers and project staff can liaise with the customer to discuss their requirements and offer advice as to the best and most cost-effective solution for them.

Training for our customers is also a vital part of the package that we can offer. We can supply both in-house and on-site training courses to ensure that the operators and maintenance customers are the most important part of our business and our aim is to try to develop a working relationship with them rather than the outdated buyer and seller philosophy”
personnel can competently operate and maintain their robots to be able to ensure the day-to-day smooth running of their equipment. As well as training our customers we also look to carry out our own in-house training courses for potential programmers and robotic engineers. We have found that there are many young people leaving education who can quickly grasp the basics required to become a junior programmer. With experience, they can progress to become a senior robot programmer. To speed up the transition, initially we try to place our junior programmers into the workplace with one of our own senior programmers. Like many occupations, experience gained is crucial and is essential for our continuing customer support.

Again, as with most companies, we recognise the need for regular improvement within our own operations, and we can proudly say that our Health and Safety systems are Safe Contractor accredited. Safe Contractor is a government-run scheme to enable organisations to provide competent suppliers with the correct Health and Safety procedures. Health and Safety is an important part of any project and has to be considered from day one. We supply all of our customers with risk assessments and method statements so as to be able to demonstrate to them that all of our activities are implemented in a safe and controlled manner. All of our manufacturing, testing, installation and programming procedures have been approved and we have the services of a trained health and safety representative to investigate and advise should the need arise.

Looking ahead, we realise that we need to remain competitive, without compromising our ability to maintain and increase our customer base, while at the same time trying to find new business opportunities.

Looking ahead, we realise that we need to remain competitive, without compromising our ability to maintain and increase our customer base, while at the same time trying to find new business opportunities.

“Looking ahead, we realise that we need to remain competitive, without compromising our ability to maintain and increase our customer base, while at the same time trying to find new business opportunities.”
MöllerTech

MöllerTech is a tier 1 automotive injection moulding manufacturer employing 330 people. We supply interior and exterior injection moulding assemblies to BMW, Toyota and Honda. We are part of the MöllerGroup who have been in existence since 1730.

The Journey

Following the economic crisis in 2010 the Möllergroup decided to focus on Kaizen as the business strategy, because we realised that we needed to improve our flexibility, reduce complexity and produce a higher quality level to our customers.

At this time both our German automotive plants started their own journey. Following several new launches at MöllerTech Wales, we were faced with many problems and we had an urgent need to:

- Reduce rejects by the customer
- Implement one piece flow concepts
- Reduce our stock levels

So in February 2013 we started our own journey into Kaizen.
Between February 2013 and 2015 we made many improvements in the plant but we were still suffering from:

» High reject levels at the customer.
» The improvements we made were not reflecting in our Key Performance Indicators.
» We did not get the return in our earnings before tax result (EBT).

So after two years of implementation we realised together that although we implemented many Kaizen tools we grasped that something was missing or wrong.

We reflected on our journey and identified that we had not really started at the base of the mountain, we concluded that we took the easy route that put us into the comfort zone of the accent. This meant we applied a standard ‘Copy & Paste’ approach to Kaizen, which led to our lack of consequence, confusion, departmental barriers and a thinking that ‘the tool alone will fix our problems’

We realised that we needed to fix the culture first then apply the tools.

So we started and went back to basics with three simple guidelines:

1. Keeping things simple.
2. Create an action right now environment (where we see problems as our friend).
3. Listen more to the people.

We now entered the next Phase of our journey, focusing on the people and culture, and this was the start of our ‘90 day Live or Die’ activity.

Our strategy was simple, we set no plan and we set no target to achieve. Why? Simply because in 90 days if we focused on what normal people would do i.e. analyse the top issues in the plant and fix them, we would never understand the issues behind the gap in the culture. So we set ourselves a 3D vision of what we wanted to achieve in the whole company during the 90 day activity.

As part of the strategy there were three key elements put in place that form the backbone of our improvement activity:

1. Reflex Plan – Our fixed and frozen production plan for the whole plant handwritten on paper by 11:30am daily and tracked every 15 minutes.

2. Daily Karawane – our management Genba meeting covering all areas of the business from out to in. This meeting takes place at 09:00am until 10:30am every day and is fully supported by all the management and key members of the organisation.
3. **15 day Kaizen Compression** – this is how we have successfully implemented Kaizen as part of our daily life, every 15 days we set new Kaizen improvement projects across all departments of the business so we are really making improvements everyday across the whole plant, this is also supported by all managers daily.

Can you imagine that every day, the whole management team and other key members spend from 09:00am until 10:30am in a daily Karawane at Genba, and then from 11:30am until 11:50am present the kaizen activities over the past 24 hours, managing over 50,000 actions per year raised in the Karawane, and still manage to leave on time at the end of the working day?

This is what we have successfully achieved at MöllerTech Wales Ltd.

The results achieved were over and above everyone’s expectations. We successfully removed all departmental barriers within the plant and created one team. Although we set no target in measurable terms we saw the following impacts:

» Overall equipment efficiency (OEE) increased by 18%
» Production value per employee (productivity) increased by 19.6%
» We reduced our finished goods inventory down by 51%.
» Our total cost of poor quality (COPQ) reduced by 54%.
» All resulting in strong EBT performance.

Two years on and the results are still growing, with over 50,000 actions put in place, Kaizen is now part of everyone’s working life, and a simple and effective production system developed resulting in a culture hardly seen anywhere else. I can only say it’s an absolute pleasure to work in such a team. This is how on top of other awards we achieved the prestigious award from Agamus Consult as 2016 Medium-sized company European Agamus Lean Production Award, the first ever company outside mainland Europe.

Not resting on our laurels, in January 2016 we launched our 48 hour Synchro System from finished goods to goods in reducing the stock levels further to create more problems in the organisation as ‘problems are truly our best friend’.

**WINNERS OF THE AUTOMOTIVE LEAN PRODUCTION AWARDS 2016**

» **OEM**: Audi AG, Plant Neckarsulm
» **International Group**: Brose Fahrzeugteile GmbH & Co. KG, Plant Coburg
» **Supplier International SME**: Möllertech UK Ltd., Plant Cwmfelinfach
» **Special Award ‘Smart Digital Operations OEM’**: FCA Italy S.p.A., Plant Melfi
» **Special Award ‘Digital Operations Supplier’**: Robert Bosch GmbH, Plant Blaichach/Immenstadt

“Although we set no target in measurable terms we saw many impacts”

**GLOSSARY**

**Kaizen** – Kaizen refers to activities that continuously improve all functions and involve all employees.

**Genba** – This is known as the real place, where something happens.

**Karawane** – Our daily management walk and Genba meeting that reviews open actions and performance, then creates new actions in each area.

**48hr Synchro System** – Our production concept with reduced stock levels that creates a pull concept to assembly and injection based on the daily customer demand.
V Installations Mechanical Handling (VIMH) are experts in the provision of engineering solutions for mechanical handling projects from specialised purpose-built unit applications, to reorganisation and/or refurbishment of customers’ existing systems. In addition, we offer a turn-key capability for complete material handling projects. Our current focus ranges across the UK automotive industry, however we have branched out into other sectors too.

Our roots go back into the mid 1980s. I created VIMH in Bromsgrove in 2002 following the transfer of the business from its founder. I joined the founder company in 1986 aged 20 as a young sales and contracts manager from an existing customer. Within a couple of years I led the business into the automotive industry as a Tier 1 supplier and took responsibility for much of the strategic development of business which is recognisable in VIMH today. During those formative years, learning about business was very much on-the-job.

Business has not always been straightforward. During the financial crisis difficult trading conditions meant that survival was my key priority. To keep the factory running VIMH took some unusual work on, including projects as far away as Russia and also a prestigious roofing project at a well-known sports arena in London. The lessons learnt in the early days of business management have stood me and VIMH in good stead.
Market activities

VIMH is one of the UK’s leading experts in providing solutions for mechanical handling projects. These include the development of bespoke conveyor and automated solutions that enable manufactured products and their components to be transported throughout our customers’ production processes. Our customers are generally large international businesses in the manufacturing and logistics sectors.

Within the automotive world we have long-standing relationships with Jaguar Land Rover (JLR), Nissan, Bentley and BMW. For some customers, this relationship is further strengthened by VIMH having full time representation within their manufacturing facilities. This enables engineering solutions to be resolved not only as problems occur, but also on occasions beforehand, thereby preventing production downtime.

Not all our business is within the automotive sector. Our non-automotive customers include JCB, GKN and Perkins. In addition to Tier 1 original equipment manufacturers (OEMs) we work closely with several international line builders such as Thyssen Krupp, Kuka, and VDL Steelweld.

The business has prospered alongside the growth in UK car production. Over recent years JLR alone has invested huge amounts into the UK economy as have many other automotive Tier 1 manufacturers who have expanded their production capacity. It is our technical know-how, experience and our ability to project manage the installation and commissioning of production lines or upgrades that differentiates us from our competitors.

Technology in action

At the highly productive JLR plant at Solihull we were tasked with devising highly-complex mechanical handling solutions for Just in Time (JIT) delivery of cockpit, wheel and tyre, seats and bumper delivery systems. This system transported the finished components from the delivery vehicles to the point of fit at the centre of the main vehicle assembly line, ensuring that the parts arrive at the same time as the vehicle they for which they are designated. This needed to be achieved without crossing or compromising the already very busy other delivery routes and walkways.

The first obstacle was, of course, offloading the components from the delivery vehicles. We achieved this by kitting out the delivery vehicles with their own 24-volt on-board, heavy duty powered roller conveyors with associated safety stops, clamping mechanisms and programmable logic controller (PLC) systems.

The delivery systems, which utilised the existing building structures, incorporating false lorry systems, numerous elevators, shuttles and turntables and approximately two miles of roller conveyors. This provided JIT delivery systems that enabled JLR to improve their onsite logistic efficiencies.

“It is our technical know-how, experience and our ability to project manage the installation and commissioning of production lines or upgrades that differentiates us from our competitors.”
UK-based with global reach

VIMH employs 50 people from our innovative, purpose-built headquarters in Solihull. This facility was opened in 2015 by Lord Digby Jones and is a modern 30,000 sq ft manufacturing operation. Prior to this we operated from three separate locations in Bromsgrove and Coleshill which at times introduced logistical inefficiencies.

The investment in quality is paramount and includes all facets of our business including people, environment and facilities. We have a modern shop floor and design facilities that enable us to meet our customers’ demanding specifications. The attention to detail is ever more important in a world that requires the highest quality as standard.

It is not only within the UK that we have a strong presence but also over recent years we have been developing an overseas presence with representation in Michigan USA. The mechanical handling industry worldwide has many opportunities and a recent success includes working in partnership with VDL Steelweld and their customer Tesla on their new generation vehicles in California.

Management vision

At VIMH we have recognised the need to create a stable, capable management team. Rapid growth over the last few years has been managed through investing in people ahead of the curve. I have also significantly benefitted from accessing an outside mentor to support me in my role as Managing Director.

Two new directors have been appointed this year to add to the business’ managerial strength and depth. The business also recognises the need to develop its own engineering talent and has an apprenticeship programme. I believe that it is important to be able to hand on an opportunity to those youngsters, just as I received in the 80s.

Our vision is clear, we want to be the mechanical handling solution provider of choice within our chosen markets. The business is clearly focused to offer the best engineered solution to our customers’ requirements.

The business also has a strong eye to our corporate social responsibility. We believe that we have a role to play in the wider community supporting those people in society whose needs are great. For example, the business provided support to take 10,000 children through KidsOut, a national children’s charity, on a theme park day out last year.

As uncertainty and risks increase within the world there remains one certainty; to remain successful the need to innovate and invest is paramount. Employing high calibre individuals who can make a difference will help us thrive in a post Brexit world for years to come.

“Our vision is clear, we want to be the mechanical handling solution provider of choice within our chosen markets.”
For modern day manufacturers, continuous improvement is critical. Dean Fashoni, General Manager at United Automation, details how the producer of power control applications went about developing and implementing a three-year business transformation project which will establish the company as a world class manufacturer.

United Automation is a family-run business which has been under its current ownership for around 30 years and the business has seen steady growth.

The company is one of the UK’s leading designers and manufacturers of industrial power control products and has achieved this position as a result of their technical strengths and a dedication to customer service.

The business has performed well in the last two decades and over that period has seen steady growth. However, more recently, maintaining margins and finding new customers has become more challenging.

Around 18 months ago, we decided that if the company was to meet these challenges, respond to the changing market place and embrace the opportunities available, we would have to undertake significant changes across the whole company.

Developing the strategy

We quickly realised that the strategy had to be based on building the capability and improving the performance of our business processes, our people and our products. To do this, I sought outside help and advice from the head of the Liverpool Enterprise Partnership Advanced Manufacturing board.
The organisation referred me to a programme they are endorsing called Manufacturing Matters – Build a Better Business, delivered by Strategies for Success Ltd and supported by the Manufacturing Technology Centre, Liverpool John Moores University (LJMU) and Skills for Growth service.

This programme also gave us access to two leading experts in world-class manufacturing and change management. With the crucial guidance of these experts, we believe becoming world class can be a reality.

Tapping into the talent pool of academic institutions is especially important for SMEs and offers a lot of value. This programme is providing United Automation with the additional support needed to ensure the successful development and introduction of the business transformation strategy.

We are an advocate of not working in isolation and the support from the Liverpool Enterprise Partnership has been crucial. In this day and age, manufacturers should always look to make full use of these valuable partnerships.

People

We believe that the strength of an organisation lies in the quality of its people and its success is determined by the strength of its leadership. We have improved management structures, clearly defined associated job roles and competencies requirements and identified actions required to improve effectiveness of the management team.

Like many UK SMEs manufacturers, sourcing skills has been our Achilles heel. Measures have been taken to address this, with the skills issue taken fully into consideration in our business improvement plan. Our aim is to recruit additional people, along with the upskilling of existing employees. To this end, we are now working with our local academic institutions.

We have one undergraduate participating in a business improvement project and using this as the basis for their final year project. With help from our local college and the skills for growth fund, we will be providing selected employees with training in business improvement techniques.

Our strategy is to focus on providing all of our employees with quality of work life so that we can establish and maintain a reputation as a preferred employer and thereby ensure we are able to attract and retain people of the required quality.

In the first half of 2017 we have recruited a production team leader and we continue recruiting for a materials management team leader, a manufacturing engineering manager, a product designer, a manufacturing engineering technician and a sales coordinator.

Processes

So far, a business planning and business improvement process has
been introduced. In addition to this, an action-based strategic business plan for growth that focuses on building capability and improving performance has been established.

Our current business management processes have been appraised against best practice, the priority areas for improvement have been identified and as a result improved processes have been introduced for:

» Managing and improving business and job performance and engaging employees in continuous improvement activities
» Managing organisational and employee development and ensuring skill shortages are identified and eliminated via recruitment of additional people and upskilling of existing employees
» Managing and improving customer relationships and resolving customer concerns
» Managing supply chain and improving supplier performance
» Managing operations and improving productivity and quality
» Developing and introducing new products including the development and documentation of the manufacturing and quality assurance system.

Our strategy objective of achieving best practice business management process was further validated when United Automation become one of the first SMEs in the North West to achieve accreditation of the recently upgraded ISO 9001:2015 standard.

2017 and beyond

This year our focus will continue to be on improving productivity and quality, reducing costs, building our customer base and engineering capability whilst developing and introducing new products.

Improvements to workplace organisation are being made to achieve more effective control of material flow and inventory. All back office activities are being reviewed to identify and eliminate non-value-added activities, improve work practices and the effectiveness of IT systems.

In addition to this, an improved process for determining product cost and ensuring a pricing policy is effectively applied has been introduced.

An improved process has also been implemented to ensure technical feasibility and commercial viability is established on all potential new business opportunities, before acceptance of the order. Working with strategic partners within the higher education sector, we will look to develop the next generation of power control products.

We have identified the commercial opportunities arising from new technological development associated with our product range. Products using this new technology are currently too expensive but costs could be reduced by developing the product design and manufacturing methods. In tune with our collaborative approach, we will look to establish a joint project with LJMU to exploit this opportunity.

We believe to achieve sustainable business growth we must strive to continually improve business capability performance”
The UK’s automotive sector continues to flourish and is now releasing ever increasing numbers of new models and unique designs. Coverzone specialises in the design and manufacture of bespoke car and bike covers and it is reassuring to know that they have been adding new cover patterns at the rate of four per week taking their impressive range to over 800 fully fitted variants for new models, classics and rare sportscars. They have recently accelerated their annual growth by over 20%.

Why cover a car you may ask? Whilst modern cars are manufactured to deal with all extremes of weather, a car unattended for an extended period of time can suffer from paintwork fade, scrapes, knocks, scratches and UV damage to the interior. Even cars that are stored indoors may require regular attention or cleaning unless a cover is fitted. Add to that the additional security aspect and the convenience of not scraping ice from the screens on winter mornings and you will see that Coverzone has a wide appeal!

Coverzone products are made of premium quality materials and are designed to deliver the highest levels of protection to all vehicles that are stored outdoors or in the garage.

Richard Barton, Managing Director commented ‘When I started the business in 2002, I identified there were many poor quality, cheap universal covers on the market as well as bespoke covers that were very expensive but made to order. This resulted in a delay to the customer of around three to four weeks.'
With our market leading range we have bridged this gap to produce fitted covers for most production vehicles that are both bespoke and ready to go. Our company now boasts a stock level of over 14,000 car and motorcycle covers ready for next day delivery across the UK and customers wanting a specific colour scheme can have their order produced by our Halesowen factory in less than two weeks.

Richard continues ‘We are in the business of protection and caring for people’s cherished belongings. Our latest range of ‘Apollo’ covers feature a special Teflon™ coating that results in rain and dirt running straight off whilst maintaining breathability with a micropore inner membrane. We manufacture covers for all tastes and pockets from the classic Mini that has been in the family for 40 years through to multi million pound supercars and even special edition stretched limousines. Our customers are car enthusiasts, motor traders, vehicle manufacturers and high performance car designers both at home and overseas. When a vehicle manufacturer is launching a new model or a film maker has an iconic car to reveal at the premiere, they seek our assistance to make a beautiful body hugging cover that conceals the identity of the car whilst accentuating the lines of the bodywork and styling.’

At Coverzone business is brisk and has continued to grow year on year despite recession and last year’s Brexit decision. Our business is largely UK based but we also have a network of stockists in Europe, America, Japan and Australia.

June 2016 saw the Coverzone brand undergo a relaunch with higher product specifications, new packaging, logos, corporate identity and website (www.cover-zone.com). The new product line up was launched at the Automechanika show at Birmingham’s NEC. We received new orders from both national and overseas companies and, encouraged by our success, we have now attended Automechanika Dubai in May 2017 as well as Automechanika Birmingham in June this year with a stand twice the size of the 2016 version. Interest has continued to be very high and we have recently announced a number of new overseas stockists.

“We are now being sought to design products in areas as diverse as airport maintenance equipment, snow clearance machinery, medical installations and heavy industry”
Export is high on our agenda as exchange rates have been very favourable for overseas buyers. Over 10 years ago we established our own stock depot in the USA and plans are now well advanced for a similar Australian outlet to keep transport costs low & delivery times to the minimum. The key to our success is our small yet highly skilled workforce, a team of industry professionals, many of whom have worked for the business since its earliest years. We are dedicated to delivering excellent service levels for our products and services. The philosophy of the business is to encourage our staff members to learn and grow their skills through in house training and further education and to promote from within. Our headquarters is near Worthing in West Sussex and all worldwide orders are processed here, even for American orders for despatch from the US depot. We produce covers in a range of technically advanced fabrics and some that are particularly well suited to extreme temperatures: consequently we have customers from the Arctic Circle in Finland to the extreme heat of the Australian Outback.

Classic car owners are well catered for at Coverzone and many owners of popular cars and vans from the 50’s 60’s and 70’s are surprised to find that we can supply them a model specific cover from stock. They are even more surprised that we also have a range of carpet sets for many English classics.

Coverzone has become known in the trade as ‘Fabric Engineers’ and we are now being sought to design products in areas as diverse as airport maintenance equipment, snow clearance machinery, medical installations and heavy industry. Our designers are regularly onsite with industrial and automotive customers across the UK and increasingly throughout Europe too. We are excited about these new challenges and with production in the UK and the Far East we are ideally situated to supply our customer requirements from small quantity batches through to volume production. We are continuing to grow steadily and whilst the world is changing and creating new challenges we see that the work that we have done establishing and promoting our brand is paying dividends and our future has many bright new opportunities.
Terex Trucks

Terex Trucks is a Scottish manufacturer of off-road dump trucks, with a heritage spanning over 65 years. The company’s passion lies in the design, production, sales and support of articulated and rigid dump trucks. These trucks transport materials used in construction, mining and quarrying applications. The company was acquired by the Volvo Group in 2014. Managing Director (MD) and General Manager, Paul Douglas, explains the key challenges, achievements and future plans of the company.

History of manufacturing excellence

We have a proud history of manufacturing in Scotland. Our factory was established in 1950 under the name Euclid Great Britain. We’ve changed hands over the years and were renamed Terex in 1968 and then Terex Trucks in 2014 when we joined the Volvo Group.

Like many of our employees, I joined as a graduate engineer in the 1980s and have held several positions before becoming MD and General Manager in 2010. I know Terex Trucks inside out, and the pride and passion I have for this company is felt by many others. We’re a key part of the local community, employing several generations of families. But Terex Trucks is not just relevant to local people, it’s important to UK manufacturing as a whole.

Our dedicated and skilled workforce, vertically integrated production site, and enviable expertise in off-road trucks are reasons why the Volvo Group acquired us in 2014.

FACTS ABOUT TEREX TRUCKS

» Headquarters: Motherwell, Scotland
» Employees: 375
» Sales: Global (+97% export)

“Our success will help the Scottish economy and UK manufacturing to thrive”
Recent challenges

We export over 97% of our equipment, via 100 dealers to customers across many segments, particularly commodity mining. Low commodity prices over the last five years have been very challenging for the mining industry, driving a huge reduction in new equipment sales and increased competition within the marketplace.

2017 has seen an upturn in commodity prices and positivity returning to many global markets, particularly Indonesia and Russia. However, opportunities remain limited and competition from other equipment manufacturers remains tough. Our hard work, streamlined processes and cost reductions keep us competitive while we work through a significant investment programme in products and processes whilst implementing new dealers. Access to finance does remain challenging for many customers but our parent company and UK and Swedish Government bodies help us offer suitable finance packages.

Lately, Brexit has brought uncertainty to many UK businesses. For us, there have been pros and cons; mainly down to the impact of the devalued pound. For now, we have leveraged the weakened pound to drive export sales but medium to long term this could increase costs for components and services from overseas. To maximise success and profitability it’s vital we have access to a stable, yet competitive UK supply base. Like many others, we’re in a ‘wait and see’ situation.

But we’re a leaner, fitter company than we were, and we have belief in our staff and our product quality.

Investment leads to success

We’ve continued to invest throughout the downturn. Investment is crucial to our success and nurturing the skills and commitment of our people. Training initiatives, career advancement and attracting new talent are vital. Our close relationships with local education establishments enable us to offer apprenticeships across the business. The end result is a skilled and motivated workforce, which benefits the local community by bringing money to the regional economy.

We’ve also invested heavily in facilities and product development recently – including upgrading machinery and improving the factory environment with new lighting, paint system and better maintenance. In the past 18 months, we’ve launched our new generation of articulated trucks, providing higher performance and lower emissions than before.

Our processes and procedures have changed too. By implementing the Volvo Production System and latest ISO standards, we’ve improved our production system and enhanced our product quality. We listen closely to our customers’ needs and, where possible, adapt our production process, supply chain or process management. We want customers to be happy with our products and service so they keep coming back.
Listening to our staff and fostering an open culture keeps us responsive and staff feeling valued; empowered through daily team meetings we ensure any issues or improvements are identified and actions taken immediately. This helps generate accountability and pride throughout the business.

**Hard work pays dividends**

The desire to succeed has empowered us to achieve certification in the quality management standard, ISO 9001:2015, and environmental management system, ISO 14001:2015. Of the former, we were one of the first companies globally and the first in the Volvo Group, to achieve this. This is huge for our business as it adds value to our reputation as a global brand and proves we are committed to being a responsible company that manufactures excellent products.

**Moving forward**

Investment in our people, products and processes, and our view of the wider industrial and economic picture, drive us to keep improving. As part of the Volvo Group we have access to research and development (R&D) investment, stability from being part of a larger group, and access to a wider customer base through partnership with an international dealer network. We will keep developing our articulated products, and we are working on an exciting new rigid dump truck platform.

All companies have to adapt to changing circumstances and we are more resilient than ever before. Our success will help the Scottish economy and UK manufacturing to thrive. We are excited about the future, but we still have a lot of work to do building our brand globally.

At Terex Trucks, we want this plant to be operating at full capacity for at least another 65 years, with innovative new products and a solid base for future generations of workers in the local area.

» **KEY BUSINESS DRIVERS**

» Safety, quality and environmental care
» Listening to what our customers want
» Training of staff and guidance of new apprentices
» Continual review and improvement of processes
» Development of new products.
» Sharing best practice across the group
Durite operates a 4,000 sq m unit, where we fulfil orders with over 98% availability across our range.

Gordon Equipments Ltd, which trades as Durite, is the UK’s leading brand in auto electrical parts. For more than 80 years, we have been delivering quality components to vehicle manufacturers and the aftermarket through a network of distributors. Durite products are of the highest quality, we deliver them promptly and with excellent customer service.

Durite does it all – everything from lighting to wiring, switches to test equipment and inverters to reversing kits with everything in between. We constantly survey the market, look at the latest technologies, work on new ideas and introduce new product lines to deliver quality, durability and improve vehicle safety across the UK and Ireland.

The company has maintained a double-digit growth in a market that has been estimated to grow by around 3% year on year. To achieve that growth, we have enhanced existing relationships and turned our focus to the commercial vehicle market, vehicle conversion specialists and fleets.

A competitive offering
With thousands of Durite quality parts, we provide a one-stop-shop to meet all our customers’ requirements, today and tomorrow.

Quality is a hallmark of the Durite brand. Customers are assured that the company does not cut corners when sourcing and manufacturing parts; from our quality standards accreditation to our team members who sample and check quality before dispatch. Customers can rely on Durite’s affordable quality, central to our reputation over the years.

We operate a fully integrated supply chain management system to fulfil

FACTS ABOUT DURITE
» Trade name: Durite
» Entity name: Gordon Equipments Ltd
» Incorporation date: 1936
» Location: Dovercourt, Essex
» Number of employees: 80
» Number of products: over 4,000
» www.durite.co.uk

“Our products are of the highest quality, delivered promptly and with excellent customer service”
our customer orders with over 98% availability across our entire product range; just about everything is in stock. Next day delivery is crucial for our customers and we work closely with our logistics partners to ensure high levels of customer satisfaction. With our new online ordering system, this process has become even smoother and easier to operate, giving our customers greater and more immediate control of their orders.

Growing with our customers

We pride ourselves on outstanding customer service at every contact level with Durite, from our field sales force, our order processing team, quality assurance, technical support and ongoing customer service. We have only been able to thrive for so long by looking after our customers.

Customers know that our technical standards and support are benchmarks in the automotive market and, in turn, that the result is a level of quality and value on which their customers in turn can rely. Whether they are looking for a new product, seeking a technical improvement or trying to resolve a problem, our team have the expertise, experience and – above all – the commitment to find a solution.

Our customers are business owners and as such want to grow year on year. They diversify their offer to be more competitive. They develop their product portfolio, shops and webshops. We have aligned the products and support we offer to help customers maximise their earnings. Constant effort is put into surveying our customers and we have doubled our sales team to ensure we always keep that close bond.

The Durite website – with its greatly increased functionality and ease of use – is another example of our dedication to provide the best service.

‘Our customer is at the core of all we do. Changing the way we do business has been quite rewarding and we will continue to seek new ways to collaboratively work with our customers who represent our brand in the trade and keep us number one,’ says Pierre Nadeau, Managing Director.

Embracing health and safety and leading the way

With over 500 road casualties across Great Britain every day, accident prevention and fleet safety remain top priorities for all fleet managers and government bodies.

‘We recognise the increased demand, from end-users to fleets, to improve road safety and this has become a core focus for us’
The use of technology to monitor drivers, vehicles and their environments is beneficial to all businesses. It helps improve drivers’ safety, lower insurance premiums and reduce operation costs by streamlining processes.

“We recognise the increased demand, from end-users to fleets, to improve road safety and this has become a core focus for our business. Durite is a Fleet Operator Recognition Scheme (FORS) Associate supplier. With our knowledge of the market requirements, we have aligned our product development activity to the FORS criteria to ensure our customers operate using only the best-performing products and services,” says Pierre Nadeau.

Durite has spent the last couple of years searching for the latest technology. We now boast a comprehensive range of high-quality equipment suitable for both 12V and 24V vehicles. From best-in-class CCTV kits to high definition digital video recorders (DVRs), dashcams to fully-integrated cloud-based telematics solution and more.

Empowering our people

Our team embodies a wealth of experience and in-depth knowledge of our products and our changing marketplace. Whether based at our operations centre, or out in the field, all of our people are driven by our core values of quality and customer service.

“The company ethos is to create an environment where new ideas from any staff member are valued,” says Pierre. As Durite continues to expand, the emphasis is on empowering our employees to take up specialist roles in research and development and technical roles.

“Technology is a great tool for growing businesses and so is maintaining a face-to-face contact with the customer. ‘Using the data available to us and going out to speak to our customers has been a winning combination for our business,’’ Pierre says.
Burnsides

Formed in the 1970s by William Burnside, the father of the current owner, we continue to be a family owned and run business specialising in the manufacture of promotional products. A major recent investment in the latest print machinery means we can offer market-leading products, indeed you’ll find several items unique to ourselves thanks to further outlay on tooling and development.

Burnsides are a long-established, but forward-thinking business, flourishing in the manufacture and provision of key fobs and promotional stickers to some of Britain’s best known car and motorbike dealerships. From that secure base, the next step forward is for us to take our products into the wider marketplace and become a brand that buyers think of when looking to promote their business or organisation.

The past few years have seen a complete transformation of our business from a company purchasing around two thirds of its total turnover to one that now produces almost all the 2.5 million items we sell each year. We have achieved this by investing in the latest digital print technology at a time when similar businesses to ourselves were closing their production facilities, looking to move orders to areas of the world with much lower labour rates. We have bucked that trend by investing in products that offer sustainable profit through automation of at least some of the process.

Managing change for success

This evolution is at the heart of our success but it also presents us with our biggest challenges. When investing in new plant, the temptation is to simply opt for the latest advances in technology. If you go down that route the risk is that you will

FACTS ABOUT BURNSIDES

» Manufactures more than 1.25 million key fobs per year
» In business for nearly 50 years
» Patent awarded in 2017 for manufacturing method with another at the final stage
» Located on the Derbyshire/Nottinghamshire border
» Design & build your own website launched Summer 2017
end up with machinery that may not even pay its own way. This may be due to the manufacturer prioritising speed of print over reliability, or it possibly incorporates a very poor support package. As an small to medium-sized enterprise (SME) we are not in a position to buy several identical machines to ensure uninterrupted production so, at director level, we keep an understanding of just how our factory works and where the bottlenecks are occurring. This has often absorbed much of my time, but I know every process in the company inside out. This strategy has its rewards. A prime example would be our most popular key fob. When we started to make this product ourselves a number of years ago we were able to print around 160 badges per hour. The machine on which we initially produced these has been replaced twice within a five-year period and we can now print 1,800 per hour and to a much higher quality. Our turnaround times have dropped and the price has remained unchanged for several years meaning we are more competitive.

In the first five months of 2017 we sold 140,000 fobs of this type compared to less than 90,000 at the same stage last year and 45,000 the year before.

**Market dynamics**

Automation has been very good for us, but we must also consider that technology moves at such a fast pace that we cannot take for granted the products we provide will always be needed. The recent scrapping of the car tax disc would be an example of this. We went from producing over 700,000 tax disc holders a year, approximately one third of our business, to almost nothing within the space of a year. This was easily the hardest period of my time in charge of the company. Technology was thought to have moved on from the old paper tax disc and we suffered as a result, though I am not sure the ending of the scheme has worked out quite as well as was foreseen.

When plans are made we must look to spread our risk and buy machines that move the existing business forward but also offer the flexibility to switch production to another product line should we ever need to do so.

With this in mind, I look to make a return on investment on plant within five years, a timescale my father would never have dreamt of considering when he started the company over 40 years ago.

We look to move the business forwards by not only selling more of the products we currently make, but also different ones that involve the same knowledge and print technology. We are currently working on a line of trophies and medals that make the best use of digital print by introducing club’s colours or emblem into the design. The final recipient will receive something far more particular to themselves and their organisation represented than they currently do.
Brexit and the future

Brexit has been very good for us so far. We have seen an increased demand for our products with notable companies specifically looking to source within the UK. We are also benefiting greatly from the swing in our favour of the dollar/pound exchange rate. Prior to the referendum we felt that on orders up to 2,000 key fobs at a time we had the advantage once carriage from the Far East was taken into consideration, now we feel that applies to any orders up to 10,000.

Companies that have previously closed their manufacturing arm, relying solely on imports, might now be regretting that decision. It has certainly been a roller coaster ride over the past ten years. We have survived the biggest recession for a generation, replaced around £350,000 of turnover lost to the demise of the tax disc holder and completely reinvented ourselves into an automated digital print and manufacturing company.

As we go into the coming years I would hope that politicians from all sides recognise how our family company has thrived and continue to create the environment that allowed my father, brought up in a backstreet of Paisley in the 50s, to be educated academically and in business guile. He strived to start a company for a better future for his family and I hope his, and my mother’s, sacrifices at the time are rewarded with the company we have built.

My personal challenge has been to take the company into the digital age, but if I am to take risks in the future then they need to be rewarded. Talk of ever higher taxes for successful business leaders will mean I will do just enough to get by when what is really needed is a spirit of optimism going into a post-Brexit Britain.

““If I am to take risks in the future then they need to be rewarded”
Phoenix Control Systems (PCS) is a specialist in industrial automation. More than 95% of our turnover comes from fixed price contracts. Each contract is unique, meaning the risks are high and the probability of reduced performance is always a concern. We have had an average turnover in excess of £4.25 million over the past five years and return profits before tax in excess of 10% of turnover.

The company strategy is to maintain a level of balance sheet to support a turnover of £7 million+ and profits realised over and above this value are returned to the employees and shareholders in the form of performance awards and dividends respectively.

PCS has been trading for over 11 years, it is 100% employee owned; it implements latest technology solutions for its clients’ production facilities and is operating mainly in the automotive industry worldwide.

The company carries out turnkey solutions for our clients, offering the following:

- Project management
- Electrical design
- Software design
- Robot programming
- Control panel manufacture, assembly, testing and delivery
- Electrical installation and testing
- Electrical, software and functional commissioning
- Client training
- Production support.
All of the above disciplines can be resourced from our in-house people who are based in Abingdon or Liverpool where we have our manufacturing facility.

We now own a subsidiary company in Monterrey Mexico for the purposes of operating in Mexico and the American continent on the same basis as the UK.

Skills

First and foremost we have to be good at what we do. We have to have the personnel who are technically capable and who can communicate well with our clients. Our clients can lose a lot of production if we do not perform and we have to maintain a high level of confidence in our engineers in order to ensure that we get future enquiries and, hopefully, resulting repeat business.

Training of our staff is necessary as technologies change and advance. We undertake an apprentice programme where we have had at least three electrical apprentices on the books for the past eight years.

We have 15 very experienced engineers and we endeavour to supplement these with younger, less experienced personnel as we try and invest in people to protect our future.

Financial strength

We started in 2006 with a target turnover of £2.5 million. We now employ 30 and we target a £4 million turnover. In the exceptional years of 2012 and 2015 we achieved £5.5 million turnovers and we have reinvested profits in previous years such that the company can finance its activities as it grows and can now support a £7 million+ turnover. We aim to maintain this level of financial strength year-on-year.

If we fail to meet the target value on the balance sheet at the end of a year, Performance Awards and Dividends are put to one side until the company returns to its intended position.

Provided that the cash flow projections are accurate and contract terms are negotiated satisfactorily and in line with our cash projection, we are in a position where the risk of failure to finance the business is all but eliminated.

Profit margin strategy

The management take the strong view that the biggest threat to the company’s solvency is a lack of continuity of work. If the company’s workforce is not fully utilised with contract work, profits are hit and if we are short of contract work then losses can be very big. When we have a dip in sales the management will cut margins to ensure that we give ourselves the maximum opportunity to win the work. This can mean bidding for contracts at a loss. When times are better, we set margins according to what we believe are competitive.

Method

We consistently estimate the cost and quantity of our materials accurately (which generally represents 50%+ of our costs). The margin against these materials is therefore more or less guaranteed and represents little risk.

“Invest in people to protect our future”
The risk for us on most projects is an overspend of engineering and labour time; for design, but mostly on site for installation, commissioning and associated expenses. Getting off site or onto paid production standby is the challenge. This is where we need to project manage effectively and avoid any project overrun where we have influence and highlight possible on costs to the client as soon as they arise. The objective is to protect our margins whilst maintaining a good relationship with the client.

Low overhead and cost control

All projects are forecast every month. Systems are in place to generate contract costs for labour and materials and these figures are updated at least monthly. The forecast margins generate the profit and loss account for the month and are also used to forecast future workload by the quarter.

The engineers, control panel labour and installation labour recover their overhead costs by working on the contracts/projects. The overhead budget is calculated annually and is used to measure how our overhead is performing.

People employed on the overhead are kept to a minimum. All administration activities are carried out using one administration person, and part of each of the director’s time: the two directors and project managers carry out the sales and estimating responsibilities.

Conclusion

Provided our engineers and electricians continue to recover the overhead by working on projects and achieving a high turnover the overhead is under control. Margins are calculated with a view to being competitive and maintaining a high turnover.

The success of the past five years compared to the first six years can be directly attributable to a very high utilisation % and the resulting turnover. For the past five years compared with the first six years, the average turnover has doubled for a modest 25% increase in net overhead. The resulting gross margin has doubled in line with the turnover meaning that the contract margins were more or less the same but due to the negligible change in the overhead the average net margin has increased by more than eight times.

The method we adopt ensures that the margins are protected as much as is reasonably practicable.

The financial strength enables us to finance the projects and overhead for an estimated maximum turnover which is in excess of anything achieved to date.

With the above in place, our risks are reduced, and the platform is set for our engineers to execute the contracts with the knowledge and experience that they possess.

The success of the company is ultimately down to the quality of engineering and our contract execution; we just have to make sure that we continue to provide the low overhead and good practice foundation such that our people are able to perform and share in that success.
P&S Automation is a perfect example of how a small business (SME) can be tough competition for giants in the same industry, providing that its leaders have drive and ambition. We pride ourselves on the high level of competence that we offer our customers accompanied by low risk, faster delivery and a level of service that many larger businesses simply cannot match. Our company demonstrates that size does not affect the quality of the product or service we supply.

When approached by a customer with any number of instrumentation, control and automation requirements we are able to offer a full service which includes:

- Calibration of sensors and instruments
- Electronic, pneumatic and hydraulic repairs
- Existing control and automation system analysis and improvement
- Replacements of obsolete equipment and systems.

Being a small business has positively affected our flexibility and reaction time to customer needs. These qualities, along with our supportive attitude, contribute greatly to our success and the good relationships that we have with our customers, which include:

- MOD
- Cammell Laird Shipbuilders and Ship repairers
- The A&P Group of Companies
- MOD
- QinetiQ
- Hanson
- V. Ships
- Many other commercial shipping companies.

FACTS ABOUT P&S AUTOMATION
- Paul Edwards, Managing Director
- Specialising in marine and industrial, instrumentation, control and automation systems
- Formed in 2003
- Based in Great Totham, Essex
- Employing 12 people
- Annual turnover circa £2m
Since the company began, our growth plans have been fairly straightforward: to maintain our existing customer base whilst expanding this gradually each year. Of course we have come across challenges, the greatest of which has been finding engineers with the electronic and practical ability that is essential in this industry. Unfortunately there is not currently a recognised qualification in ‘servicing control and automation systems’ and so this often means employing engineers with partial ability and training them ourselves through experience. It is, therefore, incredibly important for us to retain our employees. We have also found banks to be very unhelpful in terms of getting credit – this can be a tough challenge for small companies. Funding Circle (peer-to-peer lending) however has been really helpful, allowing us to raise the necessary money in order to invest in the company’s growth simply, quickly and efficiently.

Being a small company we consider it essential to maintain our in-house standards along with meeting internationally recognised ones, increasing our potential market. We are accredited to ISO 9001:2008 and are working towards ISO 9001:2015 which must be implemented by August 2018. This standard is vital in order to qualify for work in the public sector, and in many private sector businesses. We also follow the Government’s ‘Cyber Essentials’ scheme which was launched in 2014 to help businesses protect themselves against cyber-attacks – mainly hacking. Businesses are also encouraged to obtain an Environmental Accreditation.

These certifications are in addition to the Health & Safety and other legislation that we must consider; this is one of the burdens of doing business in the modern age. In 2016 we went to the time and expense of becoming ‘Green Flagged’ with the supply chain management company Avetta. This enabled us to complete work for just one commercial company (so far), which will not issue an order unless you have the ‘Green Flag’. Although this seemed like a great deal of work for one company, within three months we completed over £100k of work, making it well worth the time. For a SME these overheads can be quite onerous and off-putting but I believe you have to grasp the opportunity and move forward in order to be taken seriously by customers.
A few examples of our favourite projects:

1. The design of a GSM enabled alarm system for the Navy’s P2000 training vessels. This was a requirement that arose from the obsolescence of the existing hard wired harbour monitoring system.

   Our HarbourWatch alarm system was supplied to 18 small Navy ships, Sea Cadet training vessels and floating museums. It’s now a product of which we are incredibly proud and successfully offer to small commercial vessels which are often left unmanned, such as tugs and launches.

2. The design of a Power Management System to replace an obsolete system on board a Diesel Electric Cable Repair Ship. This was one of our very first jobs back in 2003 and we were given just four weeks to complete. We are delighted to say that it is still working well and has led to many other power management projects.

3. Replacement of an obsolete refrigeration control system on a cruise liner. For this project we designed and built a new control system. Given the nature of the product, it was necessary to install it on board within a six hour period allowing the customer to retain all the frozen and chilled provisions in the cold rooms – we travelled to Hamburg to meet the ship and did exactly that.

4. The integration of six new generators into the Machinery Control and Surveillance (MCAS) system of an Royal Fleet Auxiliary (RFA) vessel. We added new hardware and communication links to the 14-year-old system and extended the existing communication network in order to increase the signals being processed, from 4,500 to over 6,000.

We enjoyed completing this project and feel confident that we will have the ability to support the system beyond its existing ‘out of service’ date which is currently 2025.

All projects demonstrate our technical abilities and customer focus, further providing excellent references for new buyers who we hope to persuade that SMEs will often offer less risk than the larger business with which they feel comfortable to engage. The Government’s current target to spend one pound out of every three it spends on procurement with SMEs is well received. Once this has been met we look forward to the target being increased further.

With regards to Brexit, we are not daunted. Most European companies and countries seem routinely to favour suppliers from their own country and we struggle to export to what is supposedly an ‘open and fair’ market. We are hoping that Brexit will encourage both ‘Buying British’ and also exporting worldwide.

“We will have the ability to support the system beyond its existing ‘out of service’ date which is currently 2025.”
The Cartwright Group

The Cartwright Group is an independent, family-run firm. We are one of the UK’s leading manufacturers of bodies and trailers, with a deserved reputation for innovation and high-quality customer service. Based in Altrincham, Cheshire, we were established 65 years ago and proudly fly the flag for British enterprise with the slogan ‘Better. Built in Britain’.

Cartwright’s success can be attributed to developing our own talent through our award-winning apprenticeship programme and listening to our customers. This responsive, innovative approach has led Cartwright to diversify into rentals, conversions, fleet maintenance, sales of refurbished trailers and finance. From 2012 to 2016 turnover had grown by 60% and by year end March 2017 has risen further to £130 million.

Innovation excellence

Innovation in engineering is Cartwright’s hallmark and this is widely acknowledged in the industry. We provide solutions tailored for our customers to overcome specific challenges. We are continuously creating new designs of trailers and rigids to satisfy the market’s demand for improvements in fuel efficiency and operational effectiveness.

Cartwright released the Cheetah Fastback in 2010, which is the most advanced aerodynamic trailer on the market. The Cheetah Fastback was developed using computational fluid dynamics, a technique used to test the aerodynamic efficiency in Formula One. This work was undertaken in a Knowledge Transfer Partnership with Manchester Metropolitan University. Road Trials and tests at the Motor Industry Research Association (MIRA) showed it offered 9–10% fuel savings in comparison to the traditional ‘box trailer’.

Facts about the Cartwright Group

- Established 1952
- Turnover £130 million in year to March 2017
- Award-winning apprenticeship scheme
- Employs 700 people at 38-acre site in Altrincham, Cheshire
- Innovation at heart of success
- Diversified into rentals, fleet services, conversions, finance and sale of refurbished trailers, offering a ‘whole-life’ approach to trailer sector
- Contribution to cutting carbon emissions in UK
The success of the Cheetah Fastback helped Cartwright to grow and this was followed by a string of ideas that would deliver ongoing benefits to our customers. These included:

» **Advanced Technology Flooring**
   for single deck refrigerated trailers where heavier steel components were swapped out for lightweight composite materials.

» **Revamped curtainside trailer**. Using knowledge transfer from steel cold-rolling companies and manufacturers of luxury cars, Cartwright reduced the weight of the curtainside trailer by 70kg.
   **Benefits** – increased fuel efficiency, durability, rigidity and corrosion resistance, leading to lower maintenance costs and longer trailer life.

» **Aerodynamic design for doubledeck, tri-temp trailer**, drawing on Cartwright’s experience of designing the Cheetah Fastback.
   **Benefits** – improved fuel efficiency, 10% drag reduction, improved roll stability and significantly shorter loading times.

» **Multi-role Automated Pallet Delivery (APD) trailer** combines the convenience of using APD to load 26 pallets in two minutes at a specialised loading dock, with the flexibility of receiving backloads at normal depots which load by forklift truck. An internal moveable deck protects the APD mechanism.

» **A hydraulic moveable floor for refrigerated double-decks** moves away from a rope and pulley system which makes the double deck option for refrigerated loads more attractive for operators looking to reduce costs.

**Developing talent**

Cartwright is a family firm with a culture that encourages creativity and high standards. We also continue to develop our own workforce. One of the challenges facing us as we expanded was the dearth of young talent entering the sector. Therefore, Cartwright decided to develop our own talent through establishing a pioneering apprenticeship scheme, which took on forty apprentices in 2012. We committed to keeping more than 100 in the organisation at any one time as the scheme progressed. Apprentices work through every stage of the production process, before settling on a single area, alongside studying for NVQ level 2 qualifications on day release. Promising candidates go on to take further qualifications, with the company even supporting an outstanding former apprentice, Josh Redfern, to study part-time for an honours degree in engineering at Manchester Metropolitan University. Cartwright won the highly-regarded Apprenticeship of the Year award in the 2016 Motor Transport Awards and was named in the Centrica Top 100 Apprenticeship Employer List.

“**Bespoke solutions to customers’ requests are our speciality**”

Cartwright operates one of the most comprehensive apprenticeship programmes in the commercial vehicle manufacturing industry.

Cartwright apprentice Imogen Levick develops her skills at the company’s Conversions facility in Doncaster.
Our ethos at Cartwright focuses on constant innovation and we took that approach when diversifying into other parts of the trailer market. We established Cartwright Rentals, which now has a fleet of more than 6,500 varied trailers and rigids for long-or short-term hire. These include double-deck refrigerated, tri-temperature, dual and single temperature trailers, ambient and our Streetwise option. More than £7 million has been invested in the Rentals division in the past 18 months.

Cartwright Conversions, established in Doncaster in January 2016, entered the market for welfare vehicles that provide toilets, washrooms, kitchen and rest areas for mobile workforces at remote sites. A recent revolutionary innovation involved us transforming vehicles into mobile banks which then toured areas without banks.

Cartwright Fleet Services provides repair, maintenance and fleet management tools for around 12,000 vehicles, while Cartwright Spares & Parts provides necessary components for trailer care.

Cartwright refurbishes around 800 trailers a year for resale and has also established Cartwright Finance to offer flexible asset finance options.

We have created a unique ‘whole-life’ approach to the sector – whatever a customer’s need for a trailer, Cartwright can supply the service. It is truly a one-stop shop.

Our customers benefit because of our range of services and our 12-year minimum trailer life cycle guarantee, which exemplifies our goal to ‘build it right’.

The future

There are signs of an impending slowdown in our sector in 2017, for which we have prepared by diversifying our business. As demand for rentals increases, it creates demand for more maintenance, and more vehicles.

There is growth in the refrigerated double-deck trailer sectors, as operators look to reduce costs by carrying larger loads, and Cartwright is the largest double-deck manufacturer in the UK. We believe our new refrigerated double-deck with hydraulic moving deck is now the best available.

Lastly, the fall in the value of the pound after the Brexit vote has opened up new export opportunities which we are actively exploring and our ongoing challenge is to continue reaching potential customers across the globe.
Since 1968, RA Rodriguez (UK) Limited (RARUK) has been supplying quality precision components to the best of UK and European manufacturers. With highly-qualified staff located throughout the UK, we continue to act as exclusive representatives to many leading international component manufacturers from Europe, USA and Japan, all approved to the latest ISO 9001 and AS9120 quality standards.

Launched in 2016, RARUK Automation is a dedicated automation company from RA Rodriguez that specialises in the supply of products with a unique edge. From our collaborative six-axis robot through to linear axis and controls, or complete turnkey solutions, our product programme allows us to provide original equipment manufacturers (OEMs), systems integrators and manufacturers with products that can be flexibly combined to provide application-specific, innovative, automation solutions.

RA Rodriguez have been operating in the UK for almost 50 years. The traditional products that we have supplied, such as bearings, gears and drives, have not evolved a huge amount because the technology is well established. To grow our business we had to either take on new products or look to sell into new markets. The first significant growth that we have seen in the company occurred as a result of us becoming master distributor for Europe for Japanese gear manufacturer, KHK, and establishing a new market for our bearing products in Turkey.

But the biggest change came two years ago when we set up an automation company, RARUK Automation Limited. We had been representing several automation manufacturers for some time. We wanted to capitalise on that and ensure we invested properly to drive sales and raise awareness of our capabilities.
One of the prime elements of that is our relationship with Universal Robots, an innovative robotic company that are pioneering the use of collaborative robots.

We have been working with them since 2009 but it took some time to establish here, which is no surprise given the traditional conservative attitude that UK manufacturing has towards automation. It has now started to gain some traction and that is why we are investing in a vehicle to go out and deliver that message and grow the product line.

We have seen some very sophisticated users of automated equipment that like the lower cost, ease of implementation and ease of use that these collaborative robots deliver. We have major multinationals that are already using the product in the UK. However, the downside is that we have also seen small and medium-sized enterprises (SMEs) that have been wary of the technology but we are slowly convincing them that automation is an attainable ambition for them. The robot is very simple to use. The equipment is very much plug and play and puts the control back in the hands of the manufacturer rather than them being dependent on an automation supplier.

Different levels of service
We are very much a technical distributor. We offer three levels of service to our customer. First, for established automation users or machine builders we can simply supply the parts they require. Next, we have the customers who want to learn and develop their own capability. They will often ask us to look at their application, see where our technology can be used and give them some sort of feasibility studies as to whether our equipment will work in their manufacturing process. We can then progress, supplying the equipment with technical support and training.
Finally, some customers will come to us and ask for a complete turnkey solution. We will then talk to our overseas suppliers for the equipment and our network of systems integrators in the UK. We will source the equipment and the integrators will deliver the turnkey solution to our customers.

Automation that delivers results

Haydock-based Filter Design Co (FDC), a specialist in all things filter-related, has boosted its volume filter manufacturing capabilities, applying its own automation expertise and sourcing robotic and linear motion technologies through ourselves. By incorporating a Universal Robots UR3 table-top robot complete with Robotiq 2F85 gripper, FDC has quadrupled output, reduced staffing hours, increased consistency and reduced adhesive waste in glue dispensing operations for a respiratory filter. In a separate application, also automated by FDC, an IEF Werner three-axis domiLINE has provided similar benefits on a 12-station spinning machine to produce cylindrical filters.

The UR3 is a recently introduced table-top robotic arm for light assembly tasks and automated workbench scenarios. The compact robot weighs only 11kg, but has a payload of 3kg, ±360° rotation on all wrist joints and infinite rotation on the end joint. Importantly, the UR3 is built with the same proven collaborative technology as the larger UR5 and UR10 robot arms. All three robots feature the identical safety system and ±0.1mm repeatability. The UR3 has a default force sensing of 150N but the configurable safety settings can be set to stop if it encounters a force as low as 50N, if required.

In Croydon, Real Digital International, a specialist in digital print communications, has installed a Universal Robot UR10 to help with the packaging of mobile phone SIM cards. As well as automating previously mundane manual operations, the robot has allowed the company to repurpose employees to more varied tasks.

Taking control of accuracy and traceability means that Real Digital uses vision-based cameras to oversee a process which involves taking a SIM carrier, just like those found at supermarket checkouts, and inserting the SIM card, booklet and top-up card. The SIMs are then boxed and sealed with a plastic film security wrap before being placed on a pallet at rates of up to 70 boxes per hour (annually the company packs around 30 million SIM cards). However, until recently, certain aspects of this process still required an amount of mundane manual input.

Good prospects for the future

We are excited about the automation opportunities that are around now. The UK is going to have to become more competitive in its manufacturing operations, especially with what is happening with Brexit. For the UK manufacturing sector to bring jobs back to this country, they will need to embrace automation and the advantages that it can deliver. As a company, we are ideally positioned to help them improve their productivity and quality.

“We are excited about the automation opportunities that are around now. The UK is going to have to become more competitive in its manufacturing operations.”
A snap election

On the 19th April 2017, having repeatedly insisted that she had no intention of calling a snap election, Prime Minister Theresa May sprung a complete surprise when she summoned the press to Downing Street to announce she would seek a Commons vote to go to the country on June 8th 2017.

The announcement, made as Parliament returned from its Easter break, had the force of a thunderclap in Westminster. Quite unexpectedly, MPs and parties were plunged into election mode.

The immediate effect was to turn what were now the two remaining Prime Minister’s Question Times of the Parliament into de facto leader’s debates – especially since it was made clear that Theresa May would not take part in the kind of televised debates held in the 2010 and 2015 elections.

The Prime Minister stated her case: ‘There are three things that a country needs: a strong economy, strong defence and strong, stable leadership. That is what our plans for Brexit and our plans for a stronger Britain will deliver... The Right Hon. Member for Islington North (The Labour Leader, Jeremy Corbyn) would bankrupt our economy and weaken our defences and is simply not fit to lead.’

To Conservative jeers, Mr Corbyn counter-attacked: ‘She says that it is about leadership, yet she refuses to defend her record in television debates. It is not hard to see why. The Prime Minister says that we have a stronger economy, yet she cannot explain why people’s wages are lower today than they were 10 years ago or why more households are in debt. Six million people are earning less than the living wage, child poverty is up, and pensioner poverty is up.’

The two leaders traded more accusations with Theresa May warning that ordinary working people would face higher taxes and lost jobs under Labour while Mr Corbyn claimed the Prime Minister’s priority was ‘tax giveaways to the richest corporations while our children’s schools are starved of the resources they need to educate our children for the future’.

Brexit emerged as one of the Prime Minister’s main campaign themes: ‘every vote for the Conservatives will make me stronger when I negotiate for Britain with the European Union. And every vote for the Conservatives will mean we can stick to our plan for a stronger Britain and take the right long-term decisions for a more secure future for this country.’

Later that afternoon, the Commons voted to call an early election, by 522 votes to 13.
The Queen’s Speech

What a difference. Theresa May and Jeremy Corbyn’s final Commons confrontation before the election had seen the Conservatives limbering up for a triumphal campaign which would culminate in the inevitable smashing of their Labour opponents. When the diminished, battered band of Conservative MPs reassembled, minus their parliamentary majority, for the state opening of Parliament on June 21st, they were chastened and uncertain, while euphoria gripped the occupants of the Labour benches.

When they came to speak in the traditional debate on an address thanking Her Majesty for the Queen’s Speech – the new Government’s legislative programme – the dynamic between the two main figures had changed completely. Mr Corbyn seemed a far more confident, assertive parliamentary performer, relishing the opportunity to throw back the taunts that had been hurled at him during the campaign.

A Government which had warned that he could only gain power in a ‘coalition of chaos’ with the SNP and the Lib Dems had been forced to negotiate for the support of the Northern Ireland Democratic Unionists … and as the first debate of this new Parliament began, that support had not been secured. Mr Corbyn could not resist the open goal. To triumphant Labour laughter he noted that ‘the latest coalition may already be in some chaos’.

‘Nothing could emphasise that chaos more than the Queen’s Speech we have just heard: a threadbare legislative programme from a Government who have lost their majority and apparently run out of ideas altogether. This would be a thin legislative programme even if it was for one year, but for two years – two years? There is not enough in it to fill up one year.’

That was a reference to the Government’s decision to declare a two-year Parliamentary Session – a procedural move intended to ensure ministers could push through vital Brexit legislation in time for the exit date in March 2019. Mr Corbyn mocked the Prime Minister for dropping a series of election promises that had not found favour with the voters: means-testing the winter fuel allowance and replacing the triple lock on pensions among others.

On Brexit, Mr Corbyn stuck to Labour’s careful positioning in favour of a deal with the EU ‘that puts jobs and the economy first’. He called for full access to the single market and a customs arrangement that provided Britain with the ‘exact same benefits’ as now. And in his final flourish he warned the Prime Minister that Labour were now ‘not merely an Opposition; we are a Government in waiting, with a policy programme that enthused and
engaged millions of people in this election, many for the first time in their political lives. We are ready to offer real strong and stable leadership in the interests of the many, not the few.’

Grenfell Tower

The fire that destroyed Grenfell Tower, a social housing block in the London Borough of Kensington and Chelsea, seemed to some to crystallise the issues that had driven the ‘Corbyn Surge’ in the General Election just days earlier.

Accusations about the neglect of social housing tenants, chronic under-investment and official incompetence were flying, even while the pall of smoke still hovered over the capital and the horrific images of the blaze were replayed on TV.

So potent was the symbolism that it became intertwined in the debates on the post-election Queen’s Speech - but the Government also committed to keep MPs informed about the aftermath, the efforts to identify casualties in the wreckage of the tower, to re-house and assist those who had lost their homes, and to set up a public inquiry.

So it was that the Communities Secretary, Sajid Javid, came to the Commons on July 3rd to announce £2.5 million had been distributed from the special £5 million fund set up to help the residents. Mr Javid said the public inquiry and the criminal investigation had to be allowed the space to follow the evidence wherever it took them, and everyone should be careful not to prejudice their work. Responding to the Labour MP, David Lammy, who had lost a family friend in the fire, he added that although it was for the judge to determine the scope of the inquiry, he expected it to be ‘as broad and wide-ranging as possible’.

Mr Javid also dealt with the key issue of the authorities’ inability to say exactly how many people had died: ‘There has been much speculation about who was in Grenfell Tower on the night of the fire, and it is vital that we find out. The Director of Public Prosecutions has made it clear that there will be no prosecution of tenants ... who may have been illegally sub-letting their property, ... There may have been people living in flats that were illegally sub-let who had no idea about the true status of their tenancy. Their families want to know if they perished in the fire. These are their sons, their daughters, their brothers and their sisters. They need closure, and that is the least that they deserve.’

The Government was also taking urgent action to avoid another tragedy in buildings with architectural cladding similar to that which appeared to have been a factor in the Grenfell fire.
Last rites on the Brexit Bill

Back in March, when an election seemed a distant prospect, parliament’s main focus was on the European Union (Notification of Withdrawal) Bill. This Bill, which would give Theresa May the authority to begin the UK’s divorce from the European Union, was forced on the Government after a Supreme Court ruling that Parliamentary approval was required to begin the process.

Despite fears that the Bill could be watered down or even reshaped to reverse the Referendum verdict, it passed through the Commons unscathed. All attempts to amend, or add, to its 136 words were voted down. Predictions of a major rebellion of up to 50 Conservative Remainers proved unfounded, and only a handful defied the party whip.

But when it moved on to the House of Lords, where there is no Government majority and a large concentration of pro-EU peers, the Bill was amended twice.

One change guaranteed the rights of EU citizens living in the UK, and the second promised Parliament a ‘meaningful vote’ on the final Brexit deal. That meant the Bill had to return to the Commons because both Houses of Parliament must agree on the final wording of legislation.

After much debate, MPs rejected both Lords’ amendments, the Bill was sent back for immediate consideration in the House of Lords, where David Davis came to watch his Junior Minister, Lord Bridges, call on Peers to drop their opposition. And while the Liberal Democrat, Lord Oates, did urge Peers to continue defying the Government, support for the amendment melted away, and the attempt to throw it back to MPs was once more rejected, as was the attempt to keep the ‘meaningful vote’. The final form of the Bill was settled – and it was sent off for the Royal Assent, un-amended.

Article 50 is triggered

The passage of the European Union (Notification of Withdrawal) Act cleared the way for the Prime Minister to act on the Referendum verdict and formally trigger Britain’s departure talks with the EU.

She was greeted by cheering Conservative MPs when she announced, on the 29th March, that the process had begun: ‘A few minutes ago, in Brussels, the United Kingdom’s permanent representative to the EU handed a letter to the President of the European Council on my behalf confirming the Government’s decision to invoke Article 50 of the treaty on European Union. The Article 50 process is now under way and, in accordance with the wishes of the British people, the United Kingdom is leaving the European Union.’

One change guaranteed the rights of EU citizens living in the UK, and the second promised Parliament a ‘meaningful vote’ on the final Brexit deal. That meant the Bill had to return to the Commons because both Houses of Parliament must agree on the final wording of legislation.

After much debate, MPs rejected both Lords’ amendments, the Bill was sent back for immediate consideration in the House of Lords, where David Davis came to watch his Junior Minister, Lord Bridges, call on Peers to drop their opposition. And while the Liberal Democrat, Lord Oates, did urge Peers to continue defying the Government, support for the amendment melted away, and the attempt to throw it back to MPs was once more rejected, as was the attempt to keep the ‘meaningful vote’. The final form of the Bill was settled – and it was sent off for the Royal Assent, un-amended.

The passage of the European Union (Notification of Withdrawal) Act cleared the way for the Prime Minister to act on the Referendum verdict and formally trigger Britain’s departure talks with the EU.

She was greeted by cheering Conservative MPs when she announced, on the 29th March, that the process had begun: ‘A few minutes ago, in Brussels, the United Kingdom’s permanent representative to the EU handed a letter to the President of the European Council on my behalf confirming the Government’s decision to invoke Article 50 of the treaty on European Union. The Article 50 process is now under way and, in accordance with the wishes of the British people, the United Kingdom is leaving the European Union.’
A terrorist attack on Parliament

On the afternoon of March 22nd, as MPs were engaged in a routine vote of the Pensions Bill, a man drove his car into pedestrians just outside, killing two people and injuring dozens more, before stabbing to death a police officer who was guarding the gates to the Houses of Parliament, and he was then shot dead himself.

The sitting of the Commons was suspended and MPs were held in their Chamber for several hours, before being escorted away. When they returned the next day, they began with a minute of silence. Then the Speaker opened proceedings by expressing ‘our heartfelt condolences to the families and friends of the victims of this outrage. A police officer, PC Keith Palmer, was killed defending us, defending Parliament and defending parliamentary democracy.’

The Prime Minister was heard in silence as she updated MPs: ‘Yesterday, an act of terrorism tried to silence our democracy, but today we meet as normal, as generations have done before us and as future generations will continue to do, to deliver a simple message: we are not afraid, and our resolve will never waver in the face of terrorism. We meet here, in the oldest of all Parliaments, because we know that democracy, and the values that it entails, will always prevail.’
attacker, and to pay the ultimate price; a response that says to the men and women who propagate this hate and evil, “You will not defeat us.” Mr Speaker, let this be the message from this House and this nation today: our values will prevail.’

The Labour Leader, Jeremy Corbyn, said people should not allow the voices of hatred to divide or cower them – adding that PC Keith Palmer had given his life defending the public and democracy.

Watching impassively in the crowd of MPs standing at the Bar of the House, in the area across the Chamber facing the Speaker’s Chair, was the Foreign Office Minister, Tobias Ellwood. He had tried to save PC Palmer’s life by giving him mouth-to-mouth resuscitation. Many MPs took a moment to exchange a word with him as they passed or pat him on the arm. And many of those who spoke over the next hour praised his actions.

Tributes and thanks came from all the Party Leaders – the SNP’s Westminster Leader, Angus Robertson, the Liberal Democrats, Tim Farron, and the DUP’s, Nigel Dodds.

The Conservative MP, James Cleverly, had served with PC Palmer in the army spoke movingly and implored the Prime Minister to ‘posthumously recognise his gallantry and sacrifice formally.’ Theresa May promised that she would.

President Trump

This year more than most, US politics had a bearing on our own. Not only were many MPs looking across the Atlantic for a trade deal and an enhancement of the ‘special relationship’, following the decision to leave the EU. But the American people themselves had managed to outdo the British electorate when it came to delivering the most surprising democratic decision of 2016.

As recently as January 2016, a small number of MPs had gathered in Westminster Hall to debate whether or not Donald Trump should be banned
from entering the UK altogether. His comments about Muslims, among others, had led to an online petition for him to be considered a ‘hate preacher’ and therefore banned from British soil. Even those who supported the motion knew there was little chance of such a ban being implemented. But few would have suspected that, just 13 months later, Parliament would be discussing the appropriateness of a state visit from President Donald Trump.

One of the first acts of the new US President was to order a blanket ban on people from a list of Middle Eastern countries travelling to the US. In the Commons, the former Labour Leader, Ed Miliband, and the Conservative, Nadhim Zahawi, joined forces to ask the Speaker for an emergency debate – and it was held that day.

Mr Zahawi, born in Iraq to Kurdish parents, arrived in the UK as a nine-year-old refugee from Saddam Hussein’s regime. He is now a British citizen, but because he was born in Iraq, he believed he came under the Trump ban.

He told MPs his place of birth already meant he had been required to go through an interview at the US embassy, to secure the right to travel to America, under rules imposed by President Obama. But the new restrictions were much tougher.

The US Government has since clarified that people with British passports will not be affected by the ban, whatever the country of their birth, but Mr Zahawi still thought the ban was ‘wholly counterproductive’. He described how it was already being used by pro-Islamic State social media accounts as ‘clear evidence that the USA is seeking to destroy Islam. They have even called it the “blessed ban”’.

Labour’s Yvette Cooper, who chairs the Home Affairs Select Committee, was ‘deeply worried’ that the Government had already invited the new President to make a state visit to Britain: ‘It will look like an endorsement of a ban that is so morally wrong and that we should be standing against.’

The Conservative, Sir Simon Burns, disagreed: ‘I think it is absolutely right that the British Government continue the work of the Prime Minister to build bridges with President Trump so that we can, through engagement, seek to persuade him and to minimise or reduce the danger of his more outrageous policies ... I believe that very little would be achieved by cancelling a state visit to which the invitation has already been extended and accepted.’

The emergency debate was on a formal motion that MPs had ‘considered’ Donald Trump’s travel ban, so no call for a policy change was voted on.
from entering the UK altogether. His comments about Muslims, among others, had led to an online petition for him to be considered a ‘hate preacher’ and therefore banned from British soil. Even those who supported the motion knew there was little chance of such a ban being implemented. But few would have suspected that, just 13 months later, Parliament would be discussing the appropriateness of a state visit from President Donald Trump.

One of the first acts of the new US President was to order a blanket ban on people from a list of Middle Eastern countries travelling to the US. In the Commons, the former Labour Leader, Ed Miliband, and the Conservative, Nadhim Zahawi, joined forces to ask the Speaker for an emergency debate – and it was held that day.

Mr Zahawi, born in Iraq to Kurdish parents, arrived in the UK as a nine-year-old refugee from Saddam Hussein’s regime. He is now a British citizen, but because he was born in Iraq, he believed he came under the Trump ban.

He told MPs his place of birth already meant he had been required to go through an interview at the US embassy, to secure the right to travel to America, under rules imposed by President Obama. But the new restrictions were much tougher. The US Government has since clarified that people with British passports will not be affected by the ban, whatever the country of their birth, but Mr Zahawi still thought the ban was ‘wholly counterproductive’. He described how it was already being used by pro-Islamic State social media accounts as ‘clear evidence that the USA is seeking to destroy Islam. They have even called it the “blessed ban”.

Labour’s Yvette Cooper, who chairs the Home Affairs Select Committee, was ‘deeply worried’ that the Government had already invited the new President to make a state visit to Britain: ‘It will look like an endorsement of a ban that is so morally wrong and that we should be standing against.’

The Conservative, Sir Simon Burns, disagreed: ‘I think it is absolutely right that the British Government continue the work of the Prime Minister to build bridges with President Trump so that we can, through engagement, seek to persuade him and to minimise or reduce the danger of his more outrageous policies ... I believe that very little would be achieved by cancelling a state visit to which the invitation has already been extended and accepted.’

The emergency debate was on a formal motion that MPs had ‘considered’ Donald Trump’s travel ban, so no call for a policy change was voted on.