MAKING WAY FOR INDUSTRY 5.0

VISUAL COMPONENTS

Industry 4.0, characterised by a new level of interconnectedness through the Internet of Things (IoT) and smart automation, is making way for Industry 5.0. This new era is building on 4.0 concepts by focusing on innovation being human-centric and sustainable.

As this transition occurs, Visual Components, a developer of 3D simulation software for the manufacturing industry, worked with research house OnePoll to gauge the thoughts of 360 manufacturing decision makers in the UK, US and Europe (Germany and France).

Questions discussed their ongoing challenges, the levels of progress in facilitating cost savings, the state-of-play in adoption of efficient and resilient processes and their current position in terms of sustainable policies. It also explored where their investments lie in the midst of economic difficulties in 2022 and the role that technology such as simulation software is playing in supporting their employees.

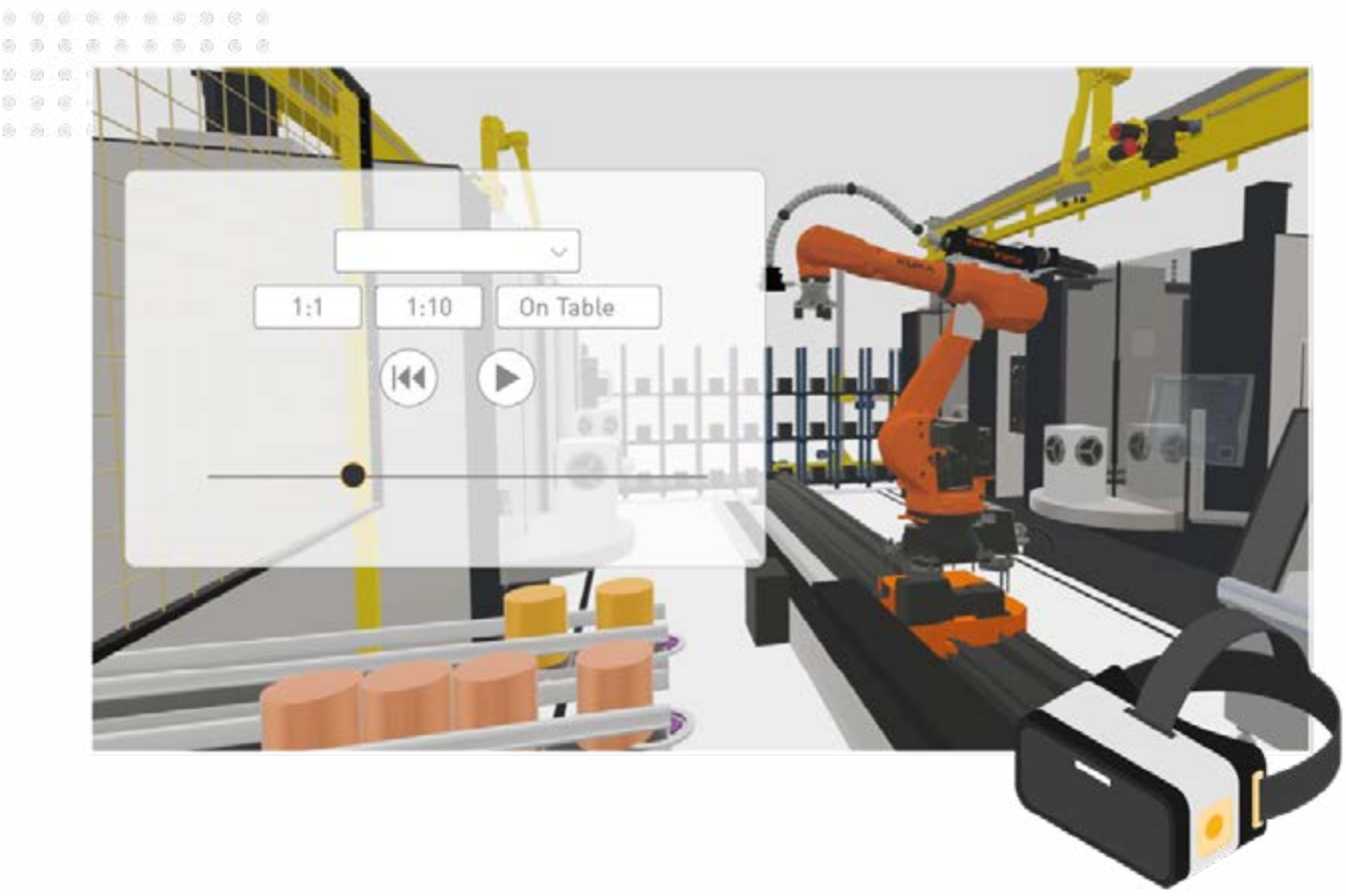
Learn more about the benefits of simulation for manufacturing at www.visualcomponents.com

HYPOTHESIS

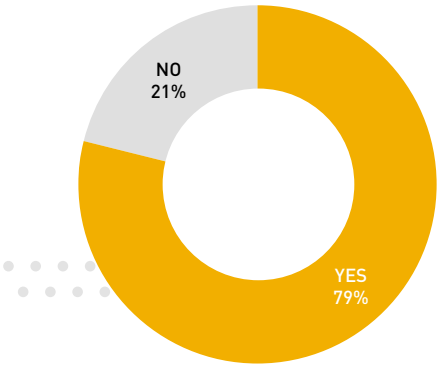
While the era of Industry 4.0 was centred around the digital transformation of manufacturing processes via technologies such as automation and robotics, **Industry 5.0 is defined by its human-centric approach, placing the wellbeing of the worker at the centre of the production process.** To enable operations to move into the Industry 5.0 era, manufacturers need to consider how the technology implemented augments their people and helps benefit their roles and career development, at a time of significant skills shortages.

Another key aspect of Industry 5.0 is resiliency, with manufacturers needing to develop a higher degree of robustness in industrial production, arming against disruptions and ensuring critical infrastructure can be supported in times of uncertainty. **Crises such as the Covid-19 pandemic have highlighted the fragility of current approaches to globalised production**, and should be balanced with the development of sufficiently resilient strategic value chains, adaptable production capacity and flexible business processes.

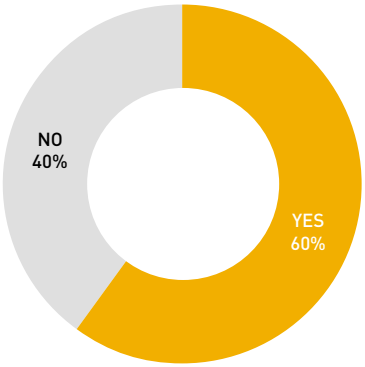
To shift to the next stage of digital transformation, manufacturers are looking towards **easy-to-use and realistic simulation software to benefit the humans in the business** and enhance resiliency.



Has the rise in energy costs had (at least) a moderate impact on your company operations?



Have client expectations evolved as costs have increased?



SKILLS SHORTAGES AND RISING COSTS

The Great Resignation has hugely impacted numerous industries. A wave of resignations took place in 2021, where an average of nearly four million people in the US left their jobs on a monthly basis, and a record number of job openings still remain in 2022. **This is having a sizeable impact on costs for manufacturers.** In the sector, almost one-in-five (18%) manufacturing decision makers say that their costs have risen by between 41%-80% due to greater investment in people, while almost half (47%) state that it is over 20%. **The scale of the problem is represented by over a quarter (27%) stating that between 21% and a staggering 60% of their workforce have departed the business since July 2021, which is additional to normal levels of turnover.**

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Cost pressures are also materialising from elsewhere, with almost eight-in-ten (79%) saying that the rise in energy costs has had at least a moderate impact on their operations. As a result of these continued cost pressures, 44% say that between 21%-60% of their operations are being held back from being updated with new technologies. **Increased costs are also being incurred due to mistakes, with 5% of manufacturers spending over half a million (£/$/€) in relation to an error in the manufacturing process.**

As cost increases arise from all sides, customer/client expectations have also evolved, with almost two-thirds (60%) of decision makers stating this. **To help battle these challenges, manufacturers must look towards solutions to ease the financial strain, starting with a focus on how they can help their people.** Technology can hold the key in a difficult economic environment.

TECHNOLOGY

In terms of technology adoption and use in the manufacturing environment, 71% are at least fairly confident that their business has embraced Industry 4.0 concepts such as automation, artificial intelligence and real-time data, while **72% believe their current solutions allow workers to be at t he centre of the production process.**

However, over half of companies are not investing in training in the use of new technologies (55%), while **almost a third (32%) don't agree that the majority of their workforce are skilled in using automation and robotics in the manufacturing environment.** This presents a blocker to progress in Industry 5.0 as humans are not being upskilled in a number of businesses.

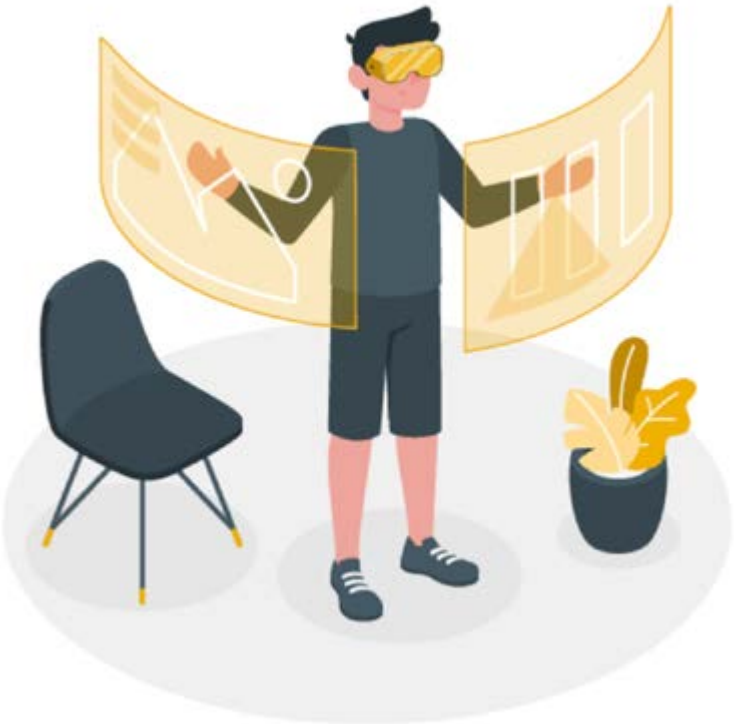
Over half (55%) of companies are not investing in training in the use of new technologies.

With staff turnover significantly adding to increased costs for manufacturers, **decision makers must focus on investment in the right technology and training to support their skilled employees** and increase the chance of retaining them.

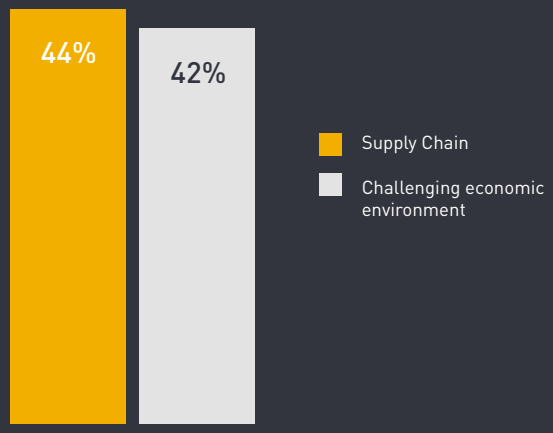
This is especially important as only just over one-in-four (27%) state that they strongly agree that they are largely aligned with their employees' views when it comes to adopting new technology. **Technology is also needed to reduce the likelihood of mistakes when implementing robotics and/or automation.**

24% of decision makers cite low flexibility for different jobs with a robot, poor layout design (20%) and a wrong focus point (16%) as key errors made in the manufacturing process. Decision makers however believe that automation and robotics is the most important to build or redesign the factories of the future (29%), highlighting the importance of eradicating errors and increasing efficiency as new robots are incorporated.

Despite the critical role of technology and people in Industry 5.0, only 18% of decision makers say they have a very good understanding of the term, while only **29% have made significant or good progress in their digital transformation roadmaps, which is vital for Industry 5.0 progress.**



What are the biggest current challenges for decision makers?



SUSTAINABILITY AND THE FUTURE OF THE INDUSTRY

Looking ahead, decision makers identify supply chain issues (44%) and the challenging economic environment (42%) as the biggest current challenges. **This reveals how the industry is now moving away from Covid-19 and Brexit-related hurdles and is instead more concerned with growing issues in 2022.**

In fact, almost four-in-ten (38%) are planning to reshore their operations due to the economic climate. The increased cost associated with maintaining operations across several countries and transporting goods across long distances is also likely to be playing a factor.

In the sustainability space, manufacturers believe they have made the most progress in waste reduction (43%), improving efficiency (43%) and reducing power usage (29%). The latter is likely to be driven by rising energy costs, with businesses looking set to pay more for the foreseeable future. Only 12% cite a reduction in needed transportation, but it's likely this figure will increase as more manufacturers look to reshore.

79% say that less than 50% of their manufacturing process is currently powered by renewable energy.

Economic conditions have proven to be a detriment to progress in sustainability. **Cost pressures have led 69% of decision makers to agree that their sustainability strategy has been held back,** while 72% of respondents say that less than 50% of the materials used in the manufacturing process are sustainable.

79% also say that less than 50% of their manufacturing process is currently powered by renewable energy. This is despite 71% of decision makers being confident that their business will play a role in the global drive for net zero carbon emissions. **Employees are also holding greater power in terms of driving sustainability strategies, with almost two-thirds (63%) stating this.** Organisations will need to explore technologies such as simulation software to not only help them reduce waste, optimise factory designs and ensure efficiency on the factory floor, but also enable them to communicate these benefits to current and potential employees to ensure attraction and retention.

EMBRACING INDUSTRY 5.0 WITH SIMULATION SOFTWARE

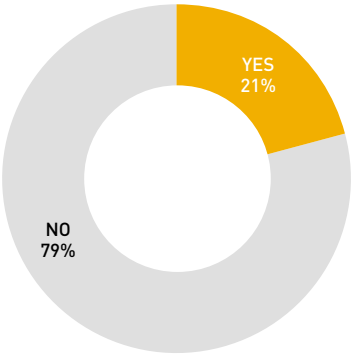
With progress in Industry 5.0 hinging on bringing both people and technology together, manufacturers must look towards the right solutions to make this happen. 85% of organisations already use such simulation software or are planning to do so, but there is room for improvement in terms of where it can be utilised, with only 27% applying it to layout planning, 25% to validation of 2D/3D CAD designs and 21% to understand the financial impact on OEE, cycle times and/or production costs.

Simulation software can be leveraged to further empower humans to adapt production capacity in line with demand by running potential scenarios, with as many as a quarter (25%) stating that this takes them up to a week or longer to do currently. With only 21% saying that their manufacturing processes are currently very flexible, humans in the business will also be empowered to improve this via simulation software.

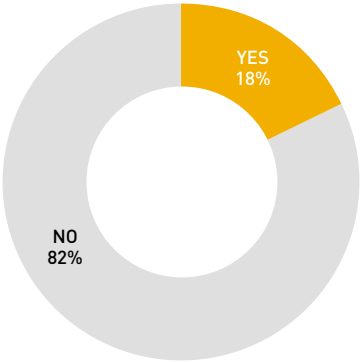
However, manufacturers will need to carefully choose the right solution to both further the capabilities of their workers and enable sustainable practices in the Industry 5.0 era. Less than one-in-five (18%) of decision makers state that their current simulation software solution is easy to use for all employees, with as many as one-in-ten (10%) still using pen and paper as an alternative. **Positively however, almost four-in-ten anticipate adopting simulation software in the next 1-2 years (39%).**

To shift to the next stage of digital transformation, manufacturers will benefit from leveraging every aspect of **easy-to-use and realistic simulation software** to not only enhance efficiency and facilitate automation on the factory floor, but **provide the tools to benefit the humans in the business and improve resiliency.** The manufacturing industry, like many others, will continue to face unprecedented challenges over the coming years, but **simulation software will help ensure resiliency in uncertain times and forge a path to adoption of Industry 5.0 concepts.**

Would you say your current manufacturing processes are very flexible?



Do you think your current simulation software is easy to use?



OUR STORY

Visual Components is a leading developer of 3D manufacturing simulation software and solutions. Founded in 1999 by a team of simulation experts, we started with a humble goal – to make manufacturing design and simulation technology easy to use and accessible to manufacturing organizations of all sizes.

Today, Visual Components is recognized as a global leader in the manufacturing simulation industry and trusted technology partner to many leading brands. We offer machine builders, system integrators, and manufacturers a simple, quick, and cost-effective solution to design and simulate production lines. With solutions for manufacturing design, sales, and application development, Visual Components software is trusted by hundreds of organizations worldwide to support critical planning and decisionmaking processes.

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