Crowe

Manufacture Newsletter

Spring 2018

Audit / Tax / Advisory / Risk

Smart decisions. Lasting value.

Nearly half of the UK's manufacturers remained concerned about their ability to access skills post-Brexit according to the Engineering Employers' Federation (EEF) report, *Navigating Brexit: the migration minefield*. With widespread stories of some European Union employees returning to Europe, permanently, companies are struggling to recruit suitably skilled staff in the UK. EEF's report shows that 47% of manufacturers are increasing training programmes for all existing employees with 37% increasing apprenticeships and/or graduate recruitment programmes.

In this edition of Manufacture we look at succession planning to replace experience and how companies can secure the skills they need in the future.

Manufacturers seem to be approaching Industry 4.0 adoption as a gradual evolution rather than a revolution. Industry 4.0 introduces businesses to immersive technologies to add to their digital transformation strategies, this is just one of many advantages. Our article on augmented reality (AR) and virtual reality (VR) in manufacturing on page 22 examines this further.

If you want to hear more about AR/VR and other I4 technologies, we will be hosting an event at the Manufacturing Technology Centre on the 10 July 2018. With a distinguished panel of speakers who will be discussing the issues and opportunities facing manufacturing businesses. Find out how to book on page 18.

Later in this edition we take a look at Servitisation, and why it is becoming so important to manufacturers, producers and distributors.

Cybercrime is a huge threat to all manufacturers; and it's only going to increase as machinery and systems become ever more digital and connected. Read our article on page 4 for a clear guide on the different forms of cybercrime and what it means for you and your business.

If you would like to discuss any of these topics further or to understand more about how we can help support you and your business, please get in touch.

Jonathan Dudley, Partner and Head of Manufacturing, Crowe

Discovering the business value of Virtual and Augmented Realities in Manufacturing

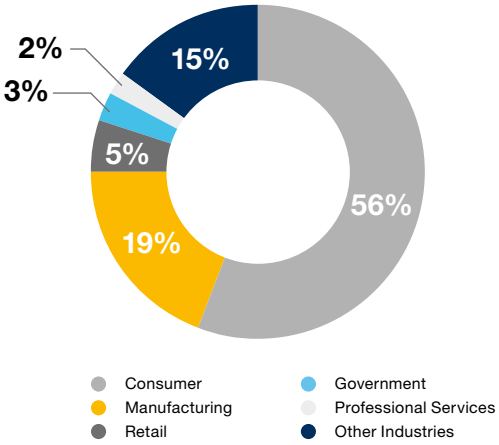
Businesses are adding immersive technologies to their digital transformation strategies ready for Industry 4.0.

Imagine being able to cut product development time from several days to a few hours. That is what Ford Motor Company did when they applied Virtual Reality (VR) to their grille design process, slashing the number of design iterations required. Now imagine cutting your sales cycle, notoriously long in the manufacturing sector, from months to weeks.

Such is the potential of VR and AR by offering a whole new dimension in communication where seeing and experiencing complex products and services in a real life, room-scale context delivers value in spades.

To some, VR and AR are still the realm of sci-fi film and gaming, but the reality is different. As IDC states, 19% of all VR and AR spending in Western Europe in 2017 was in the manufacturing sector. In fact, IDC anticipates that 85% of all VR and AR spending worldwide will be in commercial sectors by 2021; a staggering amount that can be explained by the number of business challenges VR helps address.

Top industries based on 2017 ARVR market share



Western European spending on Augmented Reality/Virtual Reality.
Source: IDC Worldwide Semi-annual Augmented and Virtual Reality Spending Guide, February 2017.

Image supplied by RenderMedia

Business challenges

Geographical limitations

In a global economy, teams and resources are spread across countries and continents. Language and time zone differences constrain departments and teams so they inevitably operate in isolated silos that don't facilitate efficient interaction and agile communication.

Complex sales messages

Sales teams can struggle to articulate the potential of products and services to solve critical customer needs, while customers have difficulty truly understanding how and even where they might work. This all too often means a lengthy sales cycle with iterative proposals and extensive documentation.

Staff churn and knowledge drain

The above challenges are compounded as corporate knowledge is lost as people leave to pursue increasingly dynamic career paths. It's expensive and time consuming to get new starters up to speed, especially in manufacturing which can involve travel to far away destinations. In many scenarios, there's a level of risk that needs to be managed – working at heights, in remote locations and so on.

VR and AR opens up new possibilities

As Industry 4.0 continues to materialise, businesses are rapidly embracing digitisation with broad reaching transformation programmes. VR and AR are central to digital transformation strategies, heralding a new way of doing business, where processes are more efficient and effective, thanks to digital technology.

The advantage of VR is that it transcends borders and physical spaces, delivering virtual experiences where people all over the world can be in the same room at once, visualising and shaping everything - from an aeroplane interior to a small piece of safety equipment - working together in a virtual space. AR meanwhile allows real products and data to be superimposed on the physical world, a customer's site for example, facilitating another layer of communication again.

> *"Manufacturing is a classic sector for VR and AR technologies. In the sales environment alone, customers can be immersed in a complex product environment, a virtual sales room for example, without the time and cost constraints that come with physical travel. Or they can be immersed in an environment you can't physically see otherwise – that's powerful!*
>
> **Mark Miles,** CEO, Render

Image supplied by RenderMedia

Studies show that users in a VR environment are engaged 34% longer than traditional 2D messaging with a 27% higher reaction.

Applications include:

Product development and engineering
Designers and customers can collaborate in the product design phase and reduce errors. Prototypes can be tested to see if all the components fit together as expected, or products can be assembled in real time as if the user were present in a 'clean-room' facility.

Sales
Imagine being able to invite customers into your virtual sales room to share your latest products and showcase where and how they are used – that is redefining the customer experience. If you sell safety equipment for oil rigs, for example, the customer can be right there on deck seeing and using the equipment in action.

Marketing
By allowing the audience to experience the finer details of your products, processes and services, not just read about them, customers engage more fully with them and understand how and where they can suit their specific requirements.

The result: a shorter sales cycle and a happy customer whose expectations now match what they will actually receive. In fact, the more complex or spatially-oriented a product is, the more valuable it is to adopt a visual selling strategy.

Introduce the customer into the product design process through VR and AR and you have another level of efficiency and customer engagement again.

Training & Health & Safety
VR is also ideally suited to training. In a virtual environment, you can familiarise staff with products and services in context, perhaps an oil rig or air field, from wherever they may be located. This can be multi-user and directed by a real instructor in the form of an avatar. Pratt and Whitney's customer training division is using VR for training jet engine maintenance mechanics. Where the work is high risk, users can practise in a safe, controlled environment, while getting to grips with the task at hand.

Is it cost prohibitive?

All this is presumed to be expensive and yet the entry point is surprisingly advantageous as most manufacturing firms tend to have a large inventory of 3D CAD content, which is a good starting point. There is inevitably an initial investment required, but it's a long-term investment, unlike other mediums. The advantage of VR and AR over film, for example, which is comparative in cost, is that VR and AR are upgradable and expandable. Like video games, incremental updates can be added as new products and services are developed.

All in all, it's a compelling proposition and one that Render is excited about.

Is it time you made the VR/AR leap?

Mark Miles, CEO at Render

Mark Miles will be speaking at our event in July at the Manufacturing Technology Centre. Join us to find out more on AR/VR in manufacturing. (See page 18.)

Working with MSA Latchways
MSA Latchways is a leading manufacturer of personal protection products that keep workers safe in hazardous conditions. In 2017, MSA asked Render to develop a ground-breaking initiative for the health and safety sector. The result was a VR experience where prospective customers can scale a high building and carry out maintenance tasks safely using MSA's personal protection equipment combined with engineered lifeline solutions.


Image supplied by RenderMedia

"

Render is helping us transition from using 2D demo visuals to creating something more visceral, allowing our prospective customers to experience our products and how they work together for real. We've always used film as the core of our customer communications. But every time we needed a new version, we'd have to go back to square one by re-editing and re-rendering. Now we have an immersive solution that's far more flexible and can be updated more easily.

Render's VR solution is an ultra-engaging communications tool that conveys products in a representative environment while empowering us with an incredibly efficient real time content pipeline.

Evelyn Webb, Global customer marketing communications manager, Fall protection, MSA

Jargon buster

What is Virtual Reality (VR)?
VR is a computer-generated scenario that simulates experience. The immersive environment can be similar to the real world or it can be fantastical, creating an experience not possible in our physical reality.

What is Augmented Reality (AR)?
AR is a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view.

What is immersive technology?
Immersive is a collective term for technologies like virtual and augmented reality where technology blurs the line between the physical and digital world, thereby creating a sense of immersion.