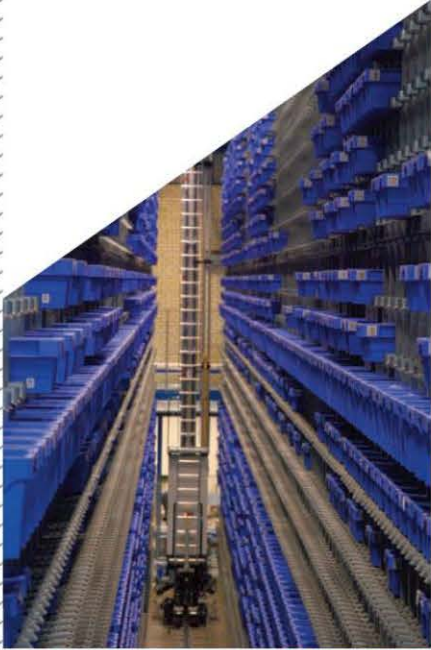


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# THE FUTURE LOOKS BRIGHT FOR AUTOMATION

*What does the future hold for the logistics industry over the next decade? Dave Berridge, Secretary of the Automated Material Handling System Association (AMHSA) takes out his crystal ball and discusses changes on the horizon, as well as the growing role of automated handling and storage solutions.*

**Not everything is capable of crossing the Atlantic successfully – Thanksgiving, American football and the Presidential system, for example, have not yet penetrated these shores. With this in mind, it was interesting to explore the US Roadmap for Material Handling & Logistics to see how much of this glimpse into the future would apply to the UK industry.**

As much of the predicted change comes by way of new technology – which is, after all, pretty much universal in its application – the answer is that quite a significant amount does apply here. Published at the start of



2014, the roadmap was the result of 18 months' work to identify the challenges and required future capabilities of the industry, based on the views and experiences expressed by American end-users, suppliers, academics, NGOs and government at a series of workshops. The thinking behind the roadmap project was that, through exploring the future shape of the industry, businesses could be better prepared to capitalise on the changes ahead, benefiting from the evolution of the supply chain – manufacturing, materials handling and transportation – into one end-to-end process.

## SKILLS SHORTAGE

One characteristic that the US market certainly shares with the UK one is a skills crisis. With ill-defined career paths, inadequate training programmes and an undeniable lack of appeal, the materials handling sector on both sides of the Atlantic is facing a shortage of younger workers. To shape up for the future, the industry needs to grasp this nettle through a determined effort to change the demographics of the workforce by attracting an increasing number of under-35s and also women.

Unsurprisingly, the impact of technology on logistics is predicted to be significant. Of course, this is only the impact we can predict – there are bound to be advances and resulting effects that we simply cannot foresee at

this point in time. As the history of the past couple of decades clearly demonstrates, many of today's school children are being prepared for jobs that have not yet been invented – who knew fifteen years ago that there would be roles today with the titles 'App Developer' and 'Chief Data Officer'?

## WEARABLE COMPUTING

The technological changes already impacting on the logistics sector are set to continue and they will have diverse effects. With increasing use of mobile devices and investment by retailers in omni-channel capabilities, the growth of e-commerce shows no sign of abating. Driven by growth in emerging markets, worldwide business-to-consumer (B2C) e-commerce sales are predicted to reach \$1.5 trillion this year, with the Asia-Pacific area leapfrogging North America to become the largest regional e-commerce market. In the future, all shipments will be fully trackable in real time from the point of order to the point of delivery and, according to the US roadmap, same-day delivery of in-stock items should be widely available. What is more, the continued growth in smart phone use and the rise of wearable computing – such as Google Glass – will enable tracking of a user's location, making dynamic delivery of physical products possible. It is predicted that such wearable computing devices for control and execution systems will also be widely adopted in the logistics sector over the next ten years.

## MASS PERSONALISATION

Mass personalisation – the ability to deliver bespoke products at mass-production prices – is a new



world that technology could make a reality. This will demand an increasingly diverse range of order, distribution and delivery channels. Helping to offset the costs of this personalisation will be the effects of urbanisation. More than 50% of the world's population already lives in densely populated urban areas and this trend is set to continue. To tackle the challenge of increasing home deliveries, a network of shared self-service parcel delivery kiosks may be employed. In addition, it is





materials will continue to reduce the cost of robotics and automation, thereby allowing their migration from manufacturing to materials handling to continue. Automatic guided vehicles may not be limited to the warehouse in the future, with driverless technology perhaps becoming commonplace on our roads and – as recent tests of drones have shown – in the sky. Robotic order picking systems will become more and more affordable, supporting single-piece picking for high throughputs.

### BIG DATA

The subject of drones brings us to another Amazon first: anticipatory logistics. Amazon has secured a patent for this algorithm-based system that is conceived as a way to ship products before customers even place an order. Reminiscent of Orwell's 'Big Brother', this forecasting model uses data from a user's Amazon activity – such as time on the site, view duration, links clicked, hover areas and wish lists – along with any real-world information (such as telephone calls) to prompt speculative shipping of items to the relevant geographical area without specifying the actual delivery address. This evolving area falls under the umbrella of 'big data' – how the abundance of data and the computing ability to make it useful is impacting on society and business. In logistics, it means that companies are able to predict demand trends and peaks more reliably than ever before. Add social media into this mix and you have a heady cocktail of data that could prove a powerful tonic for logistics managers who need to predict fashions and must-have consumer items.

### THE INTERNET OF THINGS

As the technology behind radio frequency identification (RFID) becomes more affordable, so physical objects can be made to

predicted that by 2025 a significant portion of shippers will be sharing transportation assets as standard business practice.

### MORE ROBOTICS

Advances in technology and

### AUTOMATED MATERIALS HANDLING SYSTEMS ASSOCIATION

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### AMSHA'S MEMBERS

The association's members can offer valuable advice based on the needs of each application. In particular, AMHSA's associated consultants will give impartial advice on which areas of a particular warehouse should be automated and which should not.

The members of AMHSA are:

AR Storage Solutions • Astec Conveyors Ltd • The Automated Technology Group • Bizerba (UK) Ltd • BS Handling Systems Ltd • Caljan Rite Hite Ltd • Casting Support Systems Ltd • Chep UK Ltd • CMECS Ltd • Complete Warehouse Services Ltd • Conveyor Networks Ltd • Conveyor Units Ltd • Corelogix Ltd • CSI Industries BV • Daifuku Europe Ltd • Davicon Mezzanine Floors Ltd • Dematic Ltd • Diamond Phoenix Automation Ltd • Egemin Automation • E&K Automation Ltd • Emkat Solutions Ltd • Gebhardt European Conveyor Systems Ltd • George Utz Ltd • Herts Mechanical Handling Services Ltd • Industrial Labelling Systems Ltd • Invar Systems Ltd • JBT Corporation Ltd • Jervis B Webb Company Ltd • Joloda International Ltd • Jungheinrich (UK) Ltd • Keymas Ltd • KNAPP UK Ltd • LB Foster Materials Handling • Link 51 • Logistex Ltd • Logistics Planning Consultants Ltd • Mezzanine International Ltd • Midland Handling Equipment Ltd • Nerak-Wiese Ltd • Newland Engineering Company Ltd • Pepperl + Fuchs Ltd • PSI Engineering • Reo Pack A/S • Savoye Ltd • Schoeller Allibert • SDI Group Ltd • SEW Eurodrive Ltd • Siemens Ltd • Swisslog (UK) Ltd • System Logistics • Trackfit Engineering Services Ltd • Vanderlande Industries UK • Vanriet UK Ltd • Vitronic Dr-Ing Stein • Warehouse Control Solutions Ltd • Witron Engineering

communicate with digital systems, enabling automated systems to make decisions about the movement of goods without human intervention. The future might see standardised, uniquely tagged handling units that are managed by seamless digital interfaces. This kind of future is one described by the Internet of Things (IoT) – the interconnection of uniquely identifiable embedded devices (including smart objects) within the existing Internet infrastructure. An example today is smart thermostat systems which enable remote monitoring and control, but who knows what the future applications might be?

### 3D PRINTING

The 'elephant in the room' for the future of the logistics industry, however, is 3D printing. The technology is already adept at producing items –

even ones with moving parts – that would previously have required the assembly of multiple components. By eliminating the assembly phase, 3D printing offers the potential for huge savings in manufacturing labour costs. It also, of course, avoids the storage, handling and distribution costs involved in bringing together the required components. With the world's first electric car having been built from 3D-printed parts in just 44 hours at the recent International Manufacturing Technology Show in Chicago, the logistics industry could be set to experience significant shrinkage over the next decade.



*AMHSA is the voice of the UK automated handling industry and is committed to promoting excellence in handling automation in terms of solutions, after sales support, reliability and safety. The association represents many of the sector's leading companies that between them supply the overwhelming majority of the automated handling equipment purchased in the UK.*