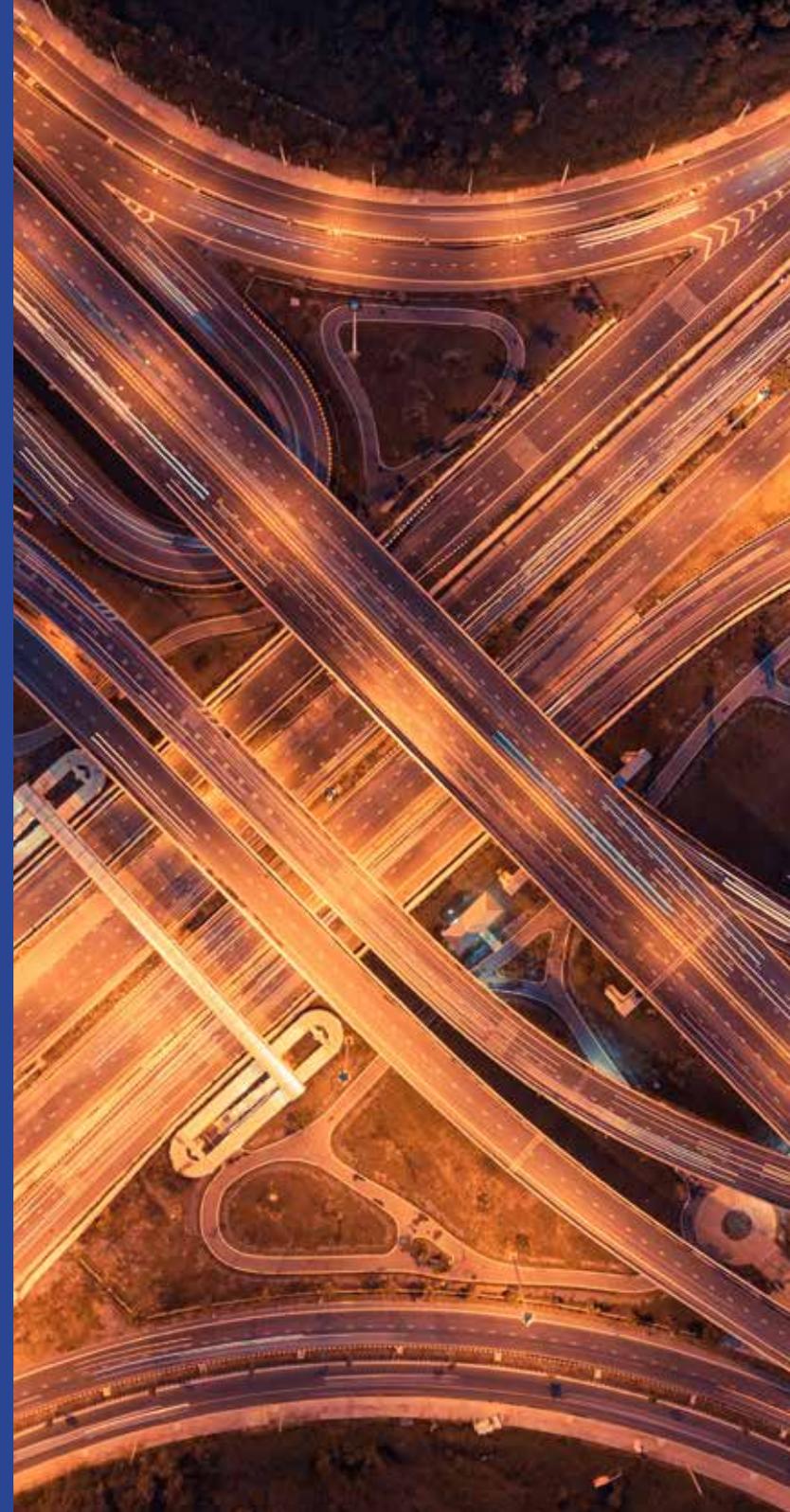


THE WINCANTON GUIDE TO THE DIGITISED SUPPLY CHAIN

HOW PARTNERSHIPS, ECOSYSTEMS AND COLLABORATION CAN TRANSFORM CUSTOMER EXPERIENCE





ADRIAN COLMAN, CEO WINCANTON PLC
FOREWORD

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Welcome to our guide to the Digitised Supply Chain.

It's all too easy to be dazzled or confused by talk of the future. Feeling overwhelmed can lead to inaction, or worse, we allow technology to replace years of wisdom with thinly veiled clairvoyance. One of the biggest issues facing logistics firms is the sheer number of technologies there are to learn about and choose from.

It doesn't matter if its bread or bricks that Wincanton collects, stores and delivers, it all needs to meet customer expectations; both as measurable KPIs but also in the deeper, human factors that build relationships, brands and reputations.

The real purpose of digitisation is to match expectations with experience; after all, if it doesn't deliver on that, what is it all for?

This is why this guide concentrates critically on two important steps; **the near and the next.**

We look at everything that is near to tangibly delivering benefits for our mutual businesses, and then we look at what comes next; the topics and technologies which are developing, but are not yet ready to be part of the supply chain beyond early stage projects.

We are gearing up for our role in the digitised supply chain by developing a deep understanding of what it takes to lead, and how to become the logistics business that more companies want to work with, that the best people want to work for, and where digitisation is embraced and never feared.

Our approach to fulfilment is a great example of this unique way of solving the digitisation puzzle. The collaborative network of partners that

we have assembled to deliver this, integrated with our leading logistics capability, means that we have the best of all worlds; allowing range extensions with zero inventory, combined with fully connected delivery process and international returns process – built in!

I hope you find this guide useful and I look forward to working together on everything that helps us both deliver customer experience that exceeds expectations.

(insert signature)

SCENE SETTING

SCENE SETTING OUR SCOPE

No matter where we look, there is a new sense of depth and complexity. As we adapt to unknown political and economic landscapes, digital technology is constantly shifting our personal and business contexts.

Our **new** digital environment is transforming logistics. The evidence is everywhere. History has shown us that global supply chains and the logistics industry have always been important beneficiaries of digital progress. It started with the internet and hasn't stopped.

The focus of this report is on digital context and key services within the logistics value chain.

The futuristic supply chain may be completely autonomous and self-orchestrated, but what are the digital priorities for people managing logistics in changing times? It's not essential to understand all the apparent complexities of digitisation, artificial intelligence, augmented

reality, machine learning and neural networks; but we do need to understand that these technologies are out there and being made accessible to new entrants and consumers, who are using these technologies to evolve the historical norm.

While there is huge potential for capitalising on change, we believe that businesses like ours, with experience and reach, have their own strengths to champion and exploit. Technology will play a key part in enabling us to transform, adapt and become an even more compelling business partner.

We must respond to innovation and change, but with an eye on the fundamentals. One thing remains a certainty - the logistics industry is being shaken up.

We focus on what's near and next.



"My dear, here we must run as fast as we can, just to stay in place. And if you wish to go anywhere you must run twice as fast as that."

The Red Queen
Alice Through the Looking Glass



WHAT DO WE MEAN BY DIGITAL?

Say digital and some people think...

- Websites
- eCommerce
- Social media

Digital is a catch-all for an ensemble of technologies and behaviours that enhance the collection and analysis of information in ways that hugely augment the capacity of the human mind and body.

Digital represents the exponential pace of change in our world, driven by the rapid adoption of technology.

It is important to distinguish digitisation from disruption.

Disruption involves a radical re-framing of business models, often by people or companies well outside the targeted industry. However, digitisation includes incumbent companies, such as

Wincanton, altering and expanding their value by harnessing digital mechanisms.

Elon Musk wants to fly you anywhere in the world in less than an hour, and build an underground "hyperloop" network that can shuttle commuters between New York and Washington, which are about 230 miles apart, in 29 minutes.

While this might sound like a pipe dream, digitisation has created a new **expectation of experience**, and encourages us to re-evaluate our place within **the ecosystem**.

Yesterday's recipe for success is no guarantee for tomorrow.

Before we talk about the technology options, we must ask why they are needed?

Digital isn't something we do, but something we are—a commonplace part of our social interactions, retail consumption, working lives, and societal fabric.

SCENE SETTING GREAT EXPECTATIONS

"Instant gratification takes too long"
Carrie Fisher
Actor

We've always wanted it faster and cheaper, but we based our expectations on what we believed was possible. Our connected, always on, contactless, mobile world has led to a new expectation of experience; not a passive expectation but an empowered one.

It seems to be human nature to resist and be reluctant to accept or believe in something new, and then in a heartbeat, adopt this idea, and be instantly unable to imagine our life without it. People are buying very differently and looking for the simplest experience across all channels. This is the change and expectation we have to be ready for. We are all harnessing technology to manage our daily lives, maximise what limited time we have and to

Happiness = Experience - Expectation

remove unnecessary stress. Leaders in digital experience are training us all in what experience to expect:

- Maps
- Notifications
- Appointments
- Reminders
- Try and buy

This expectation is not exclusive to consumer markets. If a lift breaks down in the office, or you are waiting on a delivery at work, how patient are you prepared to be? Every business is facing greater expectations around efficiency and reduction of waste and defect rates.

Our expectation as retail consumers is closer to our expectation of logistics in the workplace than we might like to admit.

Regardless of industry, every business is feeling the pressure to meet increasing customer demands for top-quality digital experiences. Every experience is compared with businesses we visit daily – Google, Facebook, YouTube, Amazon, Uber, Apple. They are setting the bar for everyone. This means every aspect of the experience matters; there's little room for experience not meeting expectations.

People don't live in an age of digital boundaries; they don't have the patience to let an industry off the hook, because it is still "catching up with digital".

Consumers do not separate their virtual experience from their physical experience.

COMMITMENT TO SET & MEET EXPECTATIONS

Amazon has set the bar and trained the world to expect more from logistics.



We recognise Amazon is changing the world of logistics. We work, not only with Amazon, but also for many companies, looking to respond to these changes.

We cannot leave our consumer lives and expectations at the door, when we arrive at work.

EXPECTATION



EXPERIENCE



SCENE SETTING NEED FOR CONTROL

72% of consumers and 89% of business buyers say they expect companies to understand their unique needs and expectations, while 66% of consumers say they're likely to switch brands if they feel treated like a number, not an individual.

Salesforce



"Customers want us to help deliver happier customers."

Marcos Hart, Business Optimisation & Transformation Director
Wincanton

And it's not just speed people crave. We are living in a trust deficiency, as recent unpredictable elections have shown, which has heightened the need for control.

The rise of the digitally discerning consumer and business customer has diluted traditional trade-offs such as cost and replaced them with a common expectation of experience.

NEEDS	DRIVER	SOLUTION
"Ready when I need it" "At my fingertips"	SPEED	Predictive planning Omnichannel
"Easy & straight forward" "Delivered to my preferred time and location"	CONVENIENT	Intuitive experience On demand
"Knowing me and my likes" "Relevant for now" "Tailored for me"	RELEVANT	Personalised Context aware Specifically suited
"Knowing history & intent" "Show me"	INTEGRATED	Joined-up channels Transparency throughout

A great experience delivers control

Our imagination used to catch up with technology:
"I can't believe that's possible!"
But now technology has to match our expectation:
'Why aren't they doing this right?'
"Why can't I send it back today?"

For supply chain professionals the focus has always been on certain truths: the right product, in the right quantity, in the right place, at the right time, for the right cost. The complexities and anxieties of this digital age don't change these truths.

What has changed is the move from supply to demand, where the consumer is now confidently setting expectations.

If an omnichannel vision is presented this must be realised by deliveries arriving at a time and place to suit the consumer.

If the promise is not met, the capability and confidence exists to express unhappiness, on a very public stage, through the awesome scale of social media.



MONZO - the mobile-only start-up bank that allows you, among other things, to track your purchases via an app, create budgets, and freeze your card temporarily if you misplace it. Yet as well as being one of the first solely digital UK banks, it is also the first bank that has managed to get people tell-all-your-friends-and-scream-about-it-online excited. (New Statesman January, 2017)



- Netflix did not kill Blockbuster, late fees did.
- Uber did not kill the taxi business, limited taxi access and fare control did.
- Apple did not kill the music industry, being forced to buy full length albums did
- Amazon did not kill other retailers, bad customer experience and service did
- Airbnb isn't killing the hotel industry, limited availability and pricing options are

Digitisation itself is not the real disruptor. Not being customer-centric, leads to imbalance in expectation and experience, which is the biggest threat to any business.

The Digital Supply Chain is built on Trust. Trust is based on ease of use, transparency and traceability.

SCENE SETTING FULFILLING EXPECTATIONS



As a customer centric business, we know that omnichannel is more than a front-end strategy unconnected from the rest of the business. Customer satisfaction is critical for every aspect of customer loyalty and repeat orders. Fast, relevant delivery with clear communication to the customer are critical factors in matching expectation with experience.

developed an efficient eFulfilment proposition. This modular approach takes care of everything from the point of order through to customer delivery, and managing returns to create a seamless circular supply chain.

What makes Wincanton's approach unique is the ability for a retailer to source products from an online marketplace of approved suppliers, who not only carry the stock outside of the retailers own supply chain but also arrange delivery direct to the end-consumer. This is due to Wincanton embracing an ecosystem of partners, which it controls through its normal managed service processes, to give incredible flexibility with the confidence that comes with 90 years of logistics experience.

To make this possible, Wincanton has developed six core elements for this integrated eFulfilment service:

While retailers are excited about making sales, many have struggled with their returns policy. Any failure to integrate an efficient and hassle-free return policy could have a serious backlash on present and future sales. Many supply chains have simply not been designed to cope with this and struggle to adapt to what a 2017 Gartner report calls the 'circular supply chain' whereby returned items are efficiently fed back into warehouse stock ready to be re-sold, or dispersed into to other process for cost recovery.

To be able to support the move to the circular supply chain, Wincanton has

1. FLEXIBLE MULTICHANNEL WAREHOUSING



Your customers are increasingly demanding a wider range of products and a greater variety of delivery options. The agility and flexibility to meet these needs at an acceptable cost is an increasingly complex logistics challenge. From dedicated warehousing to collaborative space-sharing solutions, we can provide a bespoke multichannel warehousing solution to meet the changing expectations of your customers.

2. GREAT CARRIER MANAGEMENT SOLUTIONS



We work with all leading carrier providers to deliver the optimised solution for your business needs. In order to keep pace with the latest innovations we are working closely with an intuitive and easy-to-use delivery management platform called Sorted, which enables us to offer the latest agile technology. This gives you fantastic delivery efficiency plus full traceability whichever carrier you use, and allow us to seamlessly accommodate spikes in volume by swiftly integrating new carrier services to give a full range of delivery options.

3. TRUSTED PARCEL CARRIER MANAGEMENT PARTNER



Whether your customers prefer home delivery, store delivery, drop box or click and collect, we have the most capable partners for the job. Our close working relationship with respected delivery provider ZigZag, enables us to offer an efficient managed service. This makes for the best possible traceability, proactive communication, returns flexibility and ultimately the highest level of customer experience.

4. SUPERIOR TWO-MAN HOME DELIVERY



A bespoke two-man personal service is a Wincanton speciality trusted by many market leading furniture and home retailers. This option can be enhanced with value added service such as 'room of choice', full installation by home delivery technicians skilled in premium grade assembly, and/or packaging removal. We can also offer proof of delivery and act as a customer contact centre, making pre-delivery checks and handling early stage returns inspection and management.

5. SCALABLE SUPPLIER TO CUSTOMER (S2C) SOLUTION



Our managed S2C service is an innovative solution delivering from suppliers direct to the end consumer. We remove your requirement for storage of products and the costs associated with that stage of the delivery process. We manage your suppliers and communicate with your customers to provide one single point of contact throughout the customer journey. This allows you to expand your business into new and existing markets without the confines and costs associated with holding additional stock.

6. EFFICIENT RETURNS



The efficient management of returns is fast becoming a crucial component for the success or failure of any successful retail operation. Refunds must be swiftly processed and stock recycled to ensure maximum sales potential, and we work closely with major retailers to offer highly customisable returns logistics. We can maximise product disposition through our extensive relationships and offer tailor made event management to deal with unforeseen product recalls or range changes as well as providing extensive root cause analysis.

SCENE SETTING WEATHER FORECAST

Significant environmental and social forces are also driving change for the supply chain as we know it.

While energy abundance, courtesy of renewable sources, is a future we all want to believe in, we are currently in an energy constrained and low carbon environment.

As eCommerce continues to grow, the prospect of streets tightly packed with white delivery vans, is very real. We are seeing proactive, legally-supported logistics consolidation at work in mega-cities to reduce congestion and pollution (carbon & noise). Supply chain design, including location of sites (and indeed their fundamental design), will need to take energy and emission costs related to logistics processes into account.

While in the distant future, trucks may drive themselves down our motorways, the technology is currently in its infancy

stage right now, and years away from securing the necessary regulatory approval. In the here and now, the shortage of drivers is a challenge for transportation providers and one that is calling on innovative approaches to maximise every hour a driver is behind a wheel.

While the impact of Brexit on transport has concentrated attention on air travel, there are implications on sourcing hard-working, reliable and cost effective drivers and work-force to staff fulfilment operations.

Fleet optimisation and modelling based on new, dynamic sources of data, allows businesses to maximise their resources by creating multi-stop routes, assessing direct shipment costs and determining the right fleet mix and size. Warehouse robotics and automation are not just desirable but necessary, if customers are to continue to enjoy the level of service they presently demand.

Logistics partners must be aware of the need for sustainable models that adapt in response to societal and environmental shifts that are shaping our customers' futures.



SCENE SETTING CHALLENGES FOR GOVERNMENT

The digital revolution in logistics supply chains will only unlock maximum value for UK businesses, consumers and the economy as a whole, with support and engagement from government. A number of key challenges must be met.

Creating a supportive regulatory framework for automated and semi-automated vehicles including successful implementation of platooning and other emerging logistics innovations.

Moving infrastructure investment and support beyond the still crucial, traditional area of roads, rail and interchanges to include development of a digital logistics infrastructure. Encouraging newly empowered city and regional Mayors to invest in state of the art digital networks, ensuring maximum speeds and interoperability for businesses.

Creating clarity for logistics businesses and their staff on the legal framework for employment and self-employment in the new era of digital hubs and platforms.



SCENE SETTING LOGISTICS IS A DIGITAL ECOSYSTEM

The supply chain is a result of linear thinking, as the name suggests.

For decades the logistics chain has been a relay race – suppliers pass the baton to manufacturers who pass it to logistics companies who pass it to retailers. The reality in a world of connected data, is that it actually looks more like a network than a chain.

A fundamental shift from a linear way of thinking to a networked and systems-led way of working, is becoming the norm.

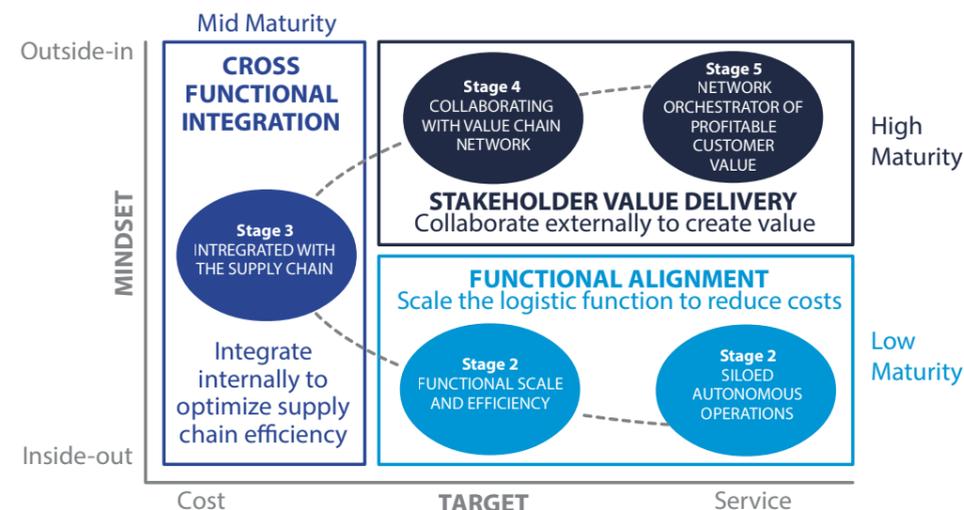
We need a networked view of data through the cycle - only then can we achieve the lightning speed and flexibility that is expected of logistics. The roots of the business network can be traced back to Japan where the *keiretsu* operate with the support of a major bank and is clustered around a large company with massive supplier contracts (Fukayama, 2007). The supply network of the future is moving from a linear flow of goods from 'factory, to

distribution centres, to store, to products moving across a complex network of interconnected-facilities, including stores, distribution centres and click and collect points.

As well as our biological existence, our communications and our professional and social lives depend on networks. Understanding them is essential to successfully navigating the 21st century.

"A digital ecosystem is an interdependent group of actors (enterprises, people and things) sharing standardised digital platforms to achieve a mutually beneficial purpose... A digital ecosystem's mutually beneficial purpose can be commercial gain, innovation, common interest, etc."

(Gartner, 2017 CIO Agenda: Global Perspectives on Seizing the Digital Ecosystem Opportunity, February 2017)



Gartner, Supply Chain Maturity Assessment For Logistics, 2017

The networked enterprise is the next evolutionary step, allowing organisations to transition from an inward-facing single company view to a holistic view of the enterprise as part of a wider ecosystem of interconnected partners.

It's impossible to own everything, so partners and collaboration within the

ecosystem are vital. Success in logistics will increasingly be determined by which ecosystem you choose to participate in and how ecosystems compete against each other.

The digital ecosystem, like any other, requires diversity to create abundance.

"Everything is about collaboration, and sharing ideas."

Marcos Hart, Business Optimisation & Transformation Director
Wincanton



Uber is the biggest taxi company that owns no cars



Airbnb is the biggest hotel company that owns no rooms

The trend away from ownership towards sharing and collaboration has been a breathtaking one in recent years.

The sharing economy will also bring benefits to logistics, as it allows participants to share fixed costs, and allows companies

to make several smaller investments rather than a single large investment, which could consume a firm's entire budget.

At Wincanton, we have many collaborative ventures between our customers' value chains, where transport and warehouse assets are optimised for mutual benefit.

The main applications for logistics will be in sharing cost-intensive physical assets, notably warehouses and freight-transporting vehicles.

A network of true partners enables rapid experimentation and response, which is why we are building such an ecosystem.

SCENE SETTING OUR ECOSYSTEM PERSPECTIVE

The ecosystem flourishes with a variety of specialisms, not uniformity.

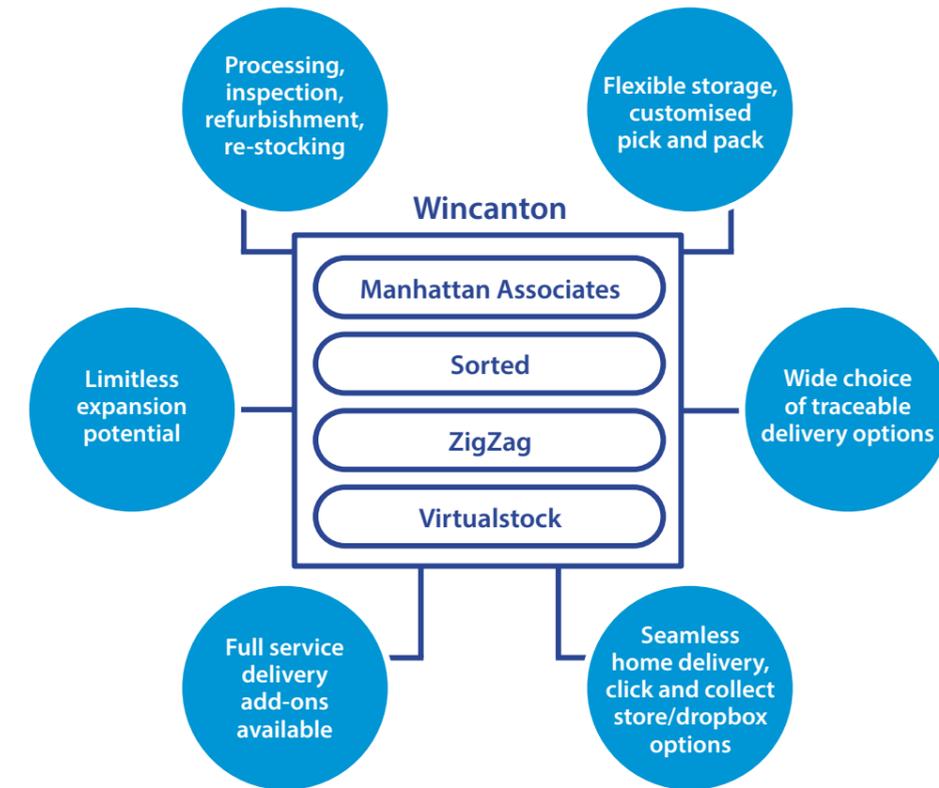
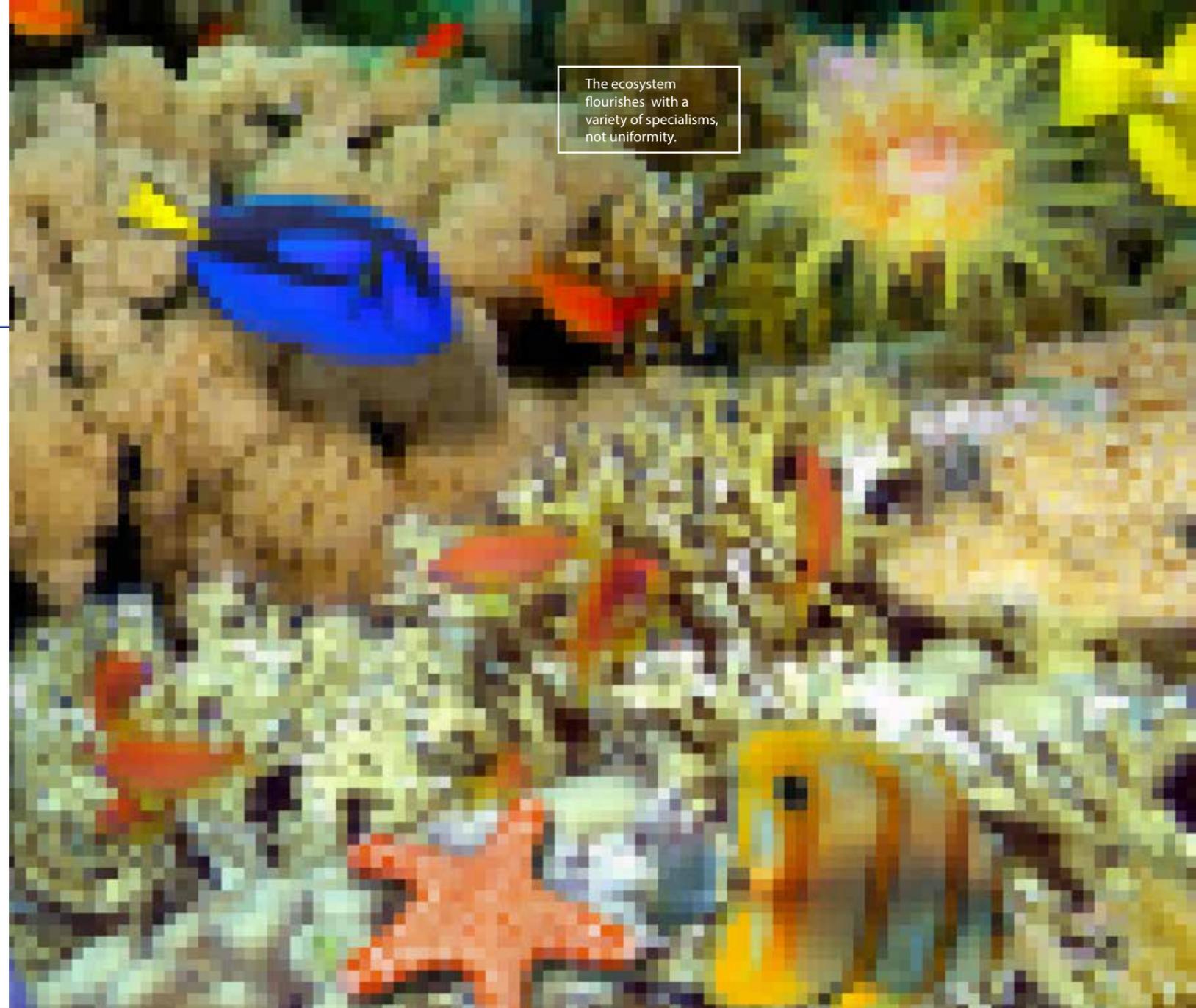
To understand and influence our ecosystem, we have searched for partners who can help us solve problems. We have identified and partnered with a number of these technology solutions.

We have configured solutions that use existing physical or digital products (or components) and have partnered with a number of beneficial technology solutions.

Traditional siloed supply chains, leave gaps in visibility, but a technology enabled ecosystem, provides visibility throughout. The transition from linear

chain to supply network requires us to embrace a new way of linking physical and digital assets. As a logistics leader we cultivate long-term relationships and mutual learning to combine the power of control with the potential of co-creation. This is only possible by shifting from a single company focus to an ecosystem perspective.

In the digitised supply chain, the essential goals of traditional supply chain management do not go away. But they are increasingly augmented by new imperatives – like learning, agility, and renewal.



"Companies need to re-think their supply chains to operate as a circular series of events, not a predominantly one-way pipe to market.."

How B2B Companies Can Learn From B2C To Build Better Returns Processes And Improve Customer Service, Gartner Report: 28 February 2017

A future comprising customer centricity with the right ecosystem of optimisation tools, will be able to provide better solutions than today's 3PL suppliers.

SCENE SETTING DATA, THE FIFTH ASSET

Traditionally asset-based logistics providers have relied on four primary assets: trucks, warehouses, people and IT foundation.

As part of the digitised supply network there is a fifth asset: data. And like other assets, we should look to optimise this to reap maximum value.

RFID was originally designed to improve inventory accuracy, but we are now in an environment where 30 billion things are constantly communicating what is happening.

Businesses generate data with every transaction they make, both internally and externally, but on its own, the vast majority of this data is left untapped.

Raw data by itself has few or no applications. No decision can or should be made without first organising and synthesising it.

The difference between success and failure will lie in how data is used. With increased transparency, seasonal trends and operational demands can be met more efficiently.

Data sharing allows item tracking throughout the supply chain, delivering the visibility challenge which we have always shared with our customers.

Better visibility will also open up new opportunities, long-term growth partnerships and potentially entirely new business models.



“The future is definitely data.”

Richard Gifford, CIO
Wincanton

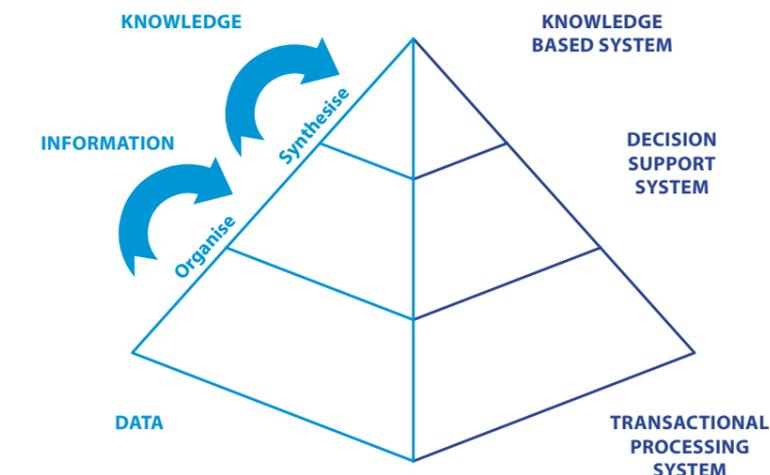
“One of the biggest opportunities for the industry, is in successfully utilising data.”

Andrew Gulliford, COO SEGRO

“Every CEO should consider themselves a data owner.”

Carl Allen, Senior Manager
IBM Global Business Consulting

DIKN PYRAMID



Pivotal to problem-solving and decision-making in our digital ecosystem, is the processing of data, information, and knowledge.

Information is derived from organising data; knowledge is extracted from synthesising information.

Data is driving the new logistics service mind-set, enabling companies to connect, collaborate and engage with their clients seamlessly in order to improve the speed and quality of service.

Data used to be about volume, collecting whatever we could, but the business opportunity lies in the variety and value of this data.

Data fuelled insight delivers experiences that create value, making rather than costing money.

SCENE SETTING CLOSE THE GAP

At the heart of every powerful digital strategy lies the desire to make things better for customers, operational excellence alone will not suffice.

Competitive advantage may have been won or lost by marginal differences in speed and accuracy, but there is a new expectation of experience.

For a digital generation, anticipating their needs is only an extension of good service; which learns from previous behaviour, appreciates context and uses previously unconnected data to improve predictions made.

People are expecting to work with companies that can anticipate their needs and make helpful suggestions, without being asked.

Amazon has declared its intent to ship your products before you even know you want them. This may sound unnerving, but it is not new. The history of shop-keeping reminds us of local stores, where an owner drawing on what he knew or could quickly deduce

about the customer, would locate the perfect product and, often, suggest additional items the customer hadn't even thought of. This may sound like a dated and quaint scene, but when time is against us all, and we are bombarded with information, we are frustrated when store staff do not have insight and information to offer this 'old fashioned' personal touch.

The ability to both manage existing customer data effectively and deploy new machine learning algorithms to make predictions is increasingly important.

Better predictions, lead to stickier contracts and better lifetime value of a customer.

As expectations continue to rise, the company that can't efficiently and effectively respond by transforming customer data into personalised and predictive customer experiences is at risk of disruption by new technology-powered innovators.

"I expect my teams to focus on the customer. They are central to everything we do."

Jonathan Shortis, Director of Energy
Wincanton

"Retail Logistics capability has to evolve quickly in order to keep up with customer demands, to satisfy home delivery requirements and responsiveness to replenish ever decreasing levels of inventory in stores. In our business it's all about determining the correct and most efficient fulfilment route to provide the customer with the best possible experience, in store or otherwise."

Neil Firth, Supply Chain Director
Majestic Wines

Wincanton Position
Only by working in a network of connected assets, where customers and partners share data can we generate new insights, and deliver happier customers



TECHNOLOGY TRENDS NEAR & NEXT

TECHNOLOGY TRENDS OUR APPROACH NEAR & NEXT



TECHNOLOGY TRENDS TECHNOLOGY HAS COME OF AGE NEAR

For technology to become part of our everyday lives at work or home, it must pass through two dimensions of development.

1. Technological development from an idea through to prototype, to application, to becoming established and eventually becoming naturalised, as part of the way we do things.
2. The other dimension is the critical human aspect which takes us from dismissing an idea as impossible, to it becoming accepted in certain situations, to shifting mental models and habits, through to becoming widely accepted and eventually normalised.

In this report, we have been considering both dimensions as we explore technology trends.

OUR DEFINITIONS

We have labelled our trends into categories of time and value for logistics. Our intention is to illustrate trends that are developing in different sections of the industry, that we can reassess, update and replace moving forward. We will summarise key technology trends which will form the springboard for subsequent updates and reports.

NEAR – becoming embedded into the way of working, with a proven benefit

NEXT – explored and surfacing into mainstream activity, likely to break within 18-24 months

HORIZON – discussion point at strategic level, likely to emerge after 24 months

We have explored all the assets that we own or share, both INSIDE and OUTSIDE the warehouse, as well as all of our vehicles. Equally, we assess the impact technology could have on our colleagues too.

Technology is an enabler for innovation and operational effectiveness. Every business looks to maximise the value of labour, materials and parts.

To help determine where to invest, we must see where and how these elements support us in optimising available assets and delivering an improved experience for customers and consumers.

- **Faster**
- **More efficient**
- **More effective**
- **More transparent**
- **More sustainable**
- **Better**
- **Cheaper**

Mega trends have established a new operational paradigm for every enterprise.

CLOUD

As businesses become increasingly digital, cloud technology delivers clear operating efficiencies. But it can also glue together valuable information held across systems to provide a single view of all activities and allow business health checks in real time.

MOBILE

This is more than just emails from your phone. The proliferation of mobile sensors has accelerated the Internet of Things (IoT). Sensor technology has become more mature and affordable to be used for industry purposes in logistics.

With the move towards 5G, wireless communication will reach a new level of maturity connecting everything anytime.

“The next evolution of mobile data (5G) could be the last step-change we see in mobile data transmission.”

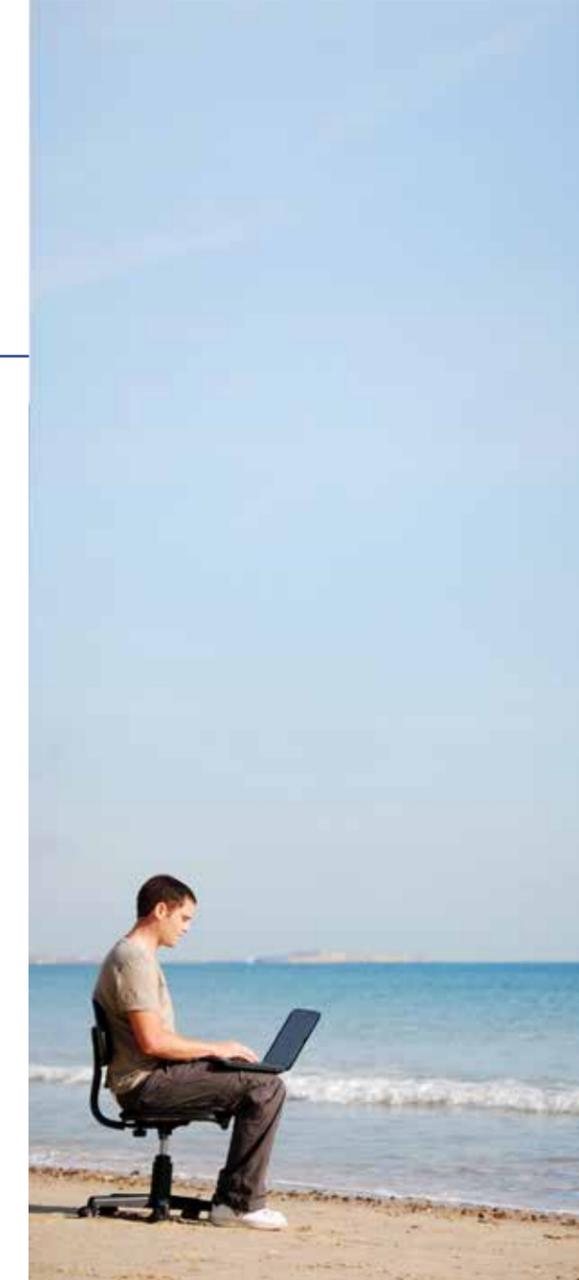
Wired, June 2017

“Pretty much every single retailer in the UK has full connectivity. There’s a much greater level of confidence in cloud computing. That side of things has happened.”

Mark Thomson, EMEA Retail Industry Solutions Director at Zebra

“How can you talk about the next generation of logistics, without cloud enablement?”

Carl Allen, Senior Manager IBM Global Business Consulting



TECHNOLOGY TRENDS OPTIMISE I.T. THE FOUNDATIONS NEAR

"It's really important we separate digital apps and solutions from foundational systems."

Richard Gifford CIO
Wincanton

TECHNOLOGY TRENDS OPTIMISE I.T. THE INTERNET OF (EVERY)THING NEXT

All the talk is of big data and the internet of things. There is much hypothesising about possibilities, but these concepts only become possible when the right infrastructure is in place.

No single solution now or in the near future will address all the problems around the supply network, but the essential cloud and mobile infrastructure, permits data collection, organisation, access, analytics, discovery and decision-making.

Organisations have rushed to keep up with the apparent tidal wave of data companies investing in new IT systems that came with their own information repository.

As logistics relies on delivering today to meet customer expectations, we need to integrate existing technologies and systems.

Over time system integrators helped us knit together systems and processes, but we never went back and knitted together the information.

This is different from the apps and software needed to enable specific tasks and requests, but prepares the foundation that enables an organisation to embrace data.

The infrastructure restrictions to becoming a data-enabled enterprise can lie in:

- Siloed data systems with duplicate data
- Lack of standardisation
- Lack of elasticity



The Internet of Things (IoT) is having a profound impact on the supply chain, as we know it.

This is the technology trend that defines 3PL moving forward.

The real value IoT creates is at the intersection of gathering data and leveraging it.

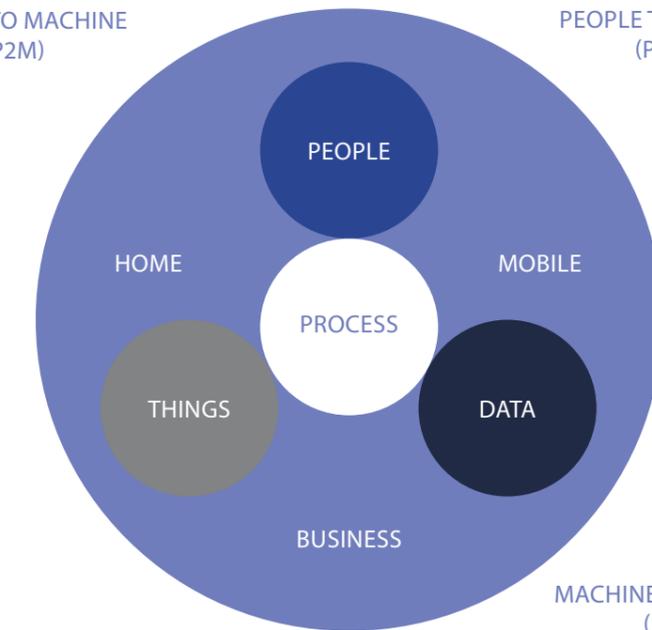
It is the pathway to highly integrated transport and warehousing solutions. This concept has been quietly changing the way that we connect with the world around us, as well as how the world can connect with us through integrated technology.

Some of its effects are already playing out today in terms of changing how companies are conducting their operations. Very soon, all devices and products will be able to identify themselves, and their surroundings, and transmit that to the handlers.

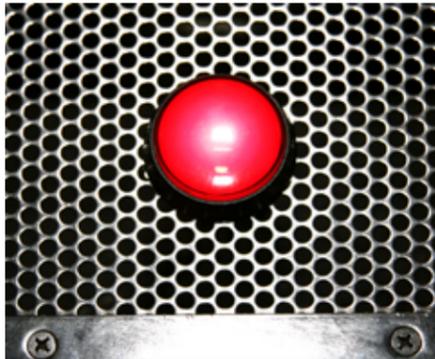
Pioneering logistics will move from traditional operational product approach of managing orders to more mature business goals of improving quality of customer service, enforcing laws and regulations and reducing liability cost.

Beyond restructuring processes, a digitised supply chain allows the shift from product-centric to service-centric business models.

PEOPLE TO MACHINE (P2M)



TECHNOLOGY TRENDS NEXT OPTIMISE I.T. ARTIFICIAL INTELLIGENCE & MACHINE LEARNING NEXT



TECHNOLOGY TRENDS OPTIMISE ASSETS WE ARE NOT ALONE NEAR

Machines and processes are merging through digitisation.

Now every asset has a voice, allowing operations to run more efficiently and make better decisions with improved, real-time visibility. Data captured from a machine, or location, can be used to inform future behaviours. Machines showing signs of wear and tear can be prioritised for repair while work is shifted to other machines.

Machine Learning applications are able to uncover hidden patterns. Computers are now able to analyse big data and adapt using algorithms iteratively without much human intervention.

So far, the computers are programmed to pull out pre-determined reports and dashboards from the database.

What about the market insights and consumer trends that no one knows to look for?

Machine Learning has the potential to be incorporated so that it can dynamically create a supply network for incoming orders, improve demand forecasting accuracy, and predict trends and performance.



Google's 2014 acquisition of DeepMind for over \$500M for a company that had generated negligible revenue, brought AI into vision. More traditional companies are also making bets on this. In 2016, GM paid over \$1B to acquire AI start-up Cruise Automation, and in 2017, Ford invested \$1B in AI start-up Argo AI, and John Deere paid over \$300M to acquire AI start-up Blue River Technology.

AI AT HOME

Before many companies have the chance to really understand how AI will impact their business, employees may have already developed a relationship with AI via intelligent assistants. This relationship will certainly impact how the enterprise assesses and adopts the technology.

We have lived through a reversal of traditional enterprise technology adoption. The process where the IT department has sole control over what technology is used in the enterprise, has been challenged, as we witness a decentralised bottom-up process. While we've seen a shift courtesy of mobile technology, social media, and collaborative tools, will the same thing happen with artificial intelligence and cognitive computing? It may very well be consumers who drive AI adoption in the enterprise.

"This era will redefine the relationship between man and machine"

Ginni Rommety
IBM Chair, 2016

"Machine learning will see things, people won't"

Michael George, Director of Logistics,
Debenhams

Waste and inefficiency have always been the enemy of supply chain management.

Are we entering a period when the supply chain community can emulate the "internet world" and create a universal, open logistics network that is economically, environmentally, and socially efficient and sustainable?

It makes obvious sense to make idle assets work and fill empty spaces. Digital sharing platforms (such as e-marketplaces) give instant access to what's available to/from an online network of users.

Like information on the internet, goods are moving around the world with ever greater efficiency and speed. Businesses are asking:

- how do we take advantage of economies of scale when shipments decrease in size?
- how do we mitigate the environmental effects?

- how do we cope with seasonal and local demand, without a new physical infrastructure?

The convenient and simple Uber approach is redefining collaboration through logistics. This creates a 'fast lane' for the movement and storage of physical goods.

Logistics can leverage these developments via more cost-effective use of warehouse space, more efficient transportation and delivery methods, or flexible staffing models.

Multi-customer warehouses help third party logistics providers achieve greater economies of scale by consolidating fulfilment, demand and know-how between several customers within a single site. Taking the concept of space sharing from the hospitality sector as a role model, sharing excess warehouse capacity brings great financial and productivity benefits.

Digital platforms provide an instant snapshot of availability and the ability to access spare capacity in almost any delivery vehicle.

Every self-respecting European city is the scene of urban consolidation centre initiatives.

There are also significant reductions in construction, waste and carbon emissions, courtesy of the **collaborative** economy.

Sharing does not mean giving something away for free, and is becoming the norm in the digital economy.

It is time to embrace this, as the benefits are plain to see.



TECHNOLOGY TRENDS VISIBILITY ACROSS THE NETWORK NEXT

The term 'Physical Internet' was used for the first time, in the domain of logistics in June 2006, on the front page of *The Economist* (Markillie 2006) issue devoted to a review of logistics practice.

The Physical Internet was defined as an open global logistics system founded on physical, digital and operational interconnectivity through encapsulation, interfaces and protocols.

For those who can embrace and take advantage of it, this goldmine of information is a very exciting prospect.

Achieving the level of collaboration needed to evolve towards a fully functional Physical Internet will require a significant change in business and managerial mind-sets. Companies will have to redefine the competitive landscape as they join forces with other enterprises – including their rivals – to develop the Physical Internet. This demands innovative, open and bold conversations

By using collaborative tools, businesses can create strong partnerships across sectors and geographies to secure their success for the future.

BLOCKCHAIN

The new buzzword in town has been launched on the world by the cryptocurrency Bitcoin. Blockchain is the underpinning technology that maintains the Bitcoin transaction ledger.

By design, anything recorded on a blockchain cannot be altered, and there are records of where each asset has been. So, while participants in a business network might not be able to trust each other, they can trust the blockchain. The benefits of blockchain for business are many, and include reduced time (for finding information, settling disputes and verifying transactions), decreased

costs (for overhead and intermediaries) and alleviated risk (of collusion, tampering and fraud).

This technology has the potential to provide a new and immutable level of traceability and enable frictionless transactions like we have not seen before. However there are still obstacles to overcome before we see large scale adoption: standards definition, cost factors involved due to the high computational power needed to enable a blockchain, and as with any network effect to take off, buy-in from multiple stakeholders.



TECHNOLOGY TRENDS DISRUPTIVE TECHNOLOGY FOR LOGISTICS NEXT

IBM is working with large food suppliers like Walmart, Dole and Nestlé to incorporate blockchain technology, into the global food supply chain. Blockchain technology can quickly track a product's progress from farm to store shelf. The technology offers a more efficient way to figure out when and where food items are contaminated, which can help producers and public health officials limit contagions.

IBM has already started testing out the technology with Walmart, which was able to track a product from a farm all the way to its store shelves. That tracking process, which historically has taken days or weeks, took seconds.

The traditionally reactive facilities management sector is undergoing revenue and experience-led disruption through IoT innovation. Services in buildings are scheduled whether required or not, and waste was an issue for ISS and their clients.

Partnering with IBM, ISS integrates and analyses data from millions of devices and sensors embedded into its buildings – including doors, windows, chairs, meeting rooms, dispensers and air conditioning systems. Data is uploaded onto IBM's Watson IoT cloud platform and its cognitive

computing technology learns from it, helping ISS to optimise its services and further its understanding of how people use buildings. The buildings work for people, predicting what is needed for an improved experience. Clients have complete transparency of how space and staff are utilised. The efficiencies and experience delivered has been a source of new revenue and led the way for the sector as competitors have prioritised IoT projects of their own, and as the sector shifts from managing facilities, to better partnership, collaboration and innovation.



TECHNOLOGY TRENDS OPTIMISING INSIDE NEAR

AUTOMATION AND ROBOTICS

The Czech writer Karel Capek coined the word “robot” almost a century ago, in a 1920 play about factory androids that each do the work of two-and-a-half humans at a fraction of the cost. This creative foresight is now a business reality.

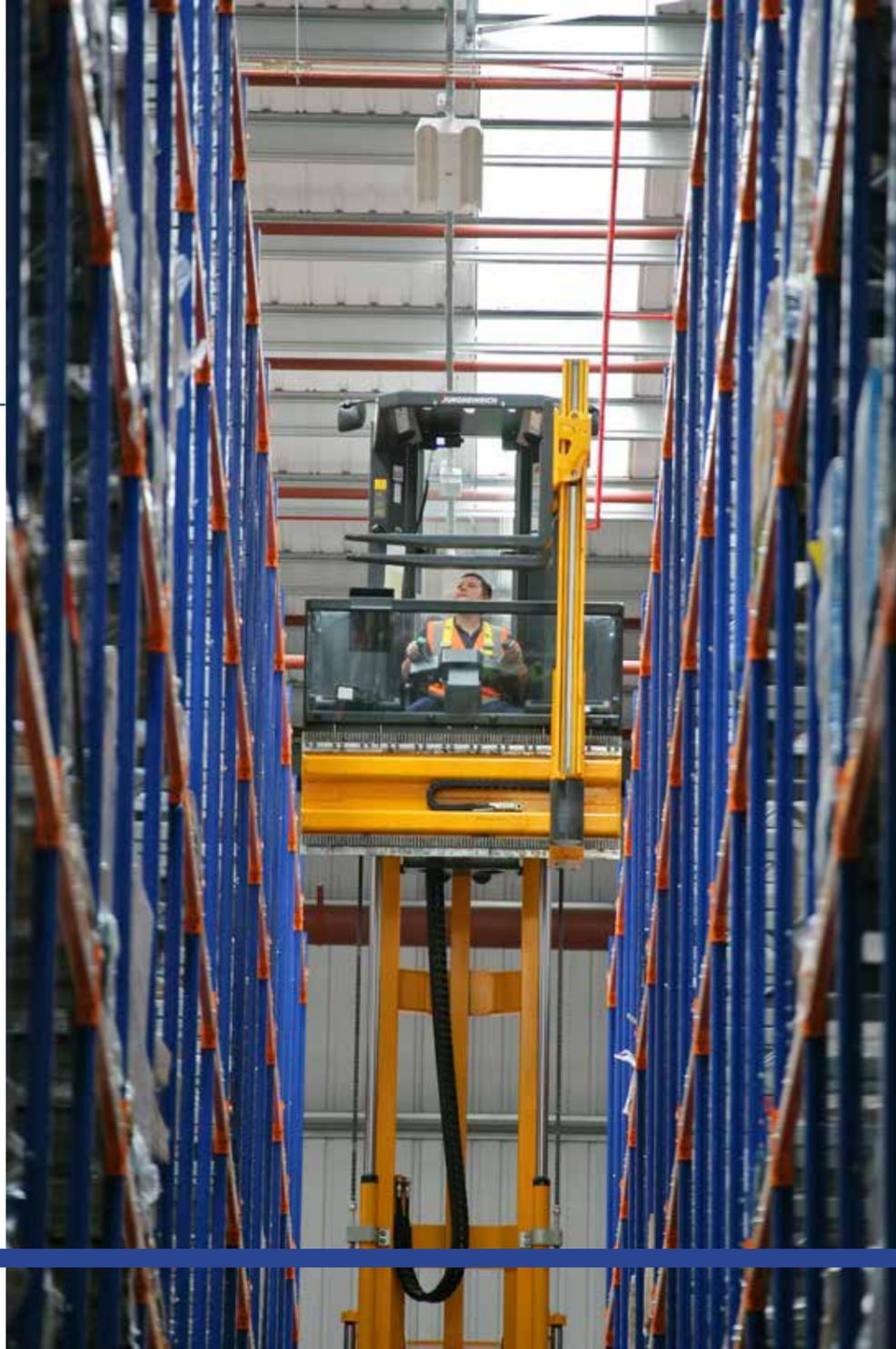
Movement of goods in large warehouses has been overtaken by automation. The shift in retail from brick and mortar to eCommerce is creating demand for warehouse automation to support modern shopping and fulfilment practices. Companies are making investments in warehouse automation and technology not just to grow, but to survive.

PICKING AND PACKING

Robotics leaves people at their stations to pick and pack. While robots fetch and carry, a human is needed to pick and finally pack for fulfilment. This is increasingly important in urban distribution centres, which are all about

movement not storage. In addition, robots can manoeuvre in tighter spaces so warehouses can be packed with more goods, allowing for more SKUs. Boosting efficiency and accuracy in the warehouse and speeding up the process, finds favour with the consumer. We can use the human worker’s strengths of awareness, perception, and decision-making, and the robot’s strengths of precision, physical power and repetition.

Alibaba’s smart warehouses see robots doing 70% of the work. They bring items to human workers who then pack and post using a robotics system wherein robotic carts pick products, place them in bins and deliver them to workers. Lids estimate warehouse productivity can be improved by up to 40%.



LOADING & UNLOADING

This is traditionally a very labour intensive task. The introduction of automation and robotics however, has begun to and continues to change the operations on the loading dock. Robot Truck Loaders and Unloaders have the capacity to navigate into the trailer and sense its surroundings, right down to the shapes and sizes of different cases. Integrated guided vehicles load and unload pallets, with the added capability to load containers in order of delivery. Such technologies for loading and unloading benefit business by streamlining the process and reducing the labour-intensive nature of work. For the end-user, the unloading process is made more convenient; this is particularly significant for clients in industries such as construction.

HEADS UP DISPLAYS

We are seeing technology make people more productive, courtesy of hands free displays. Wearable devices improve not

only packing time but also posture. It no longer matters that an employee is new to the warehouse, these headsets guide them through their operation, leading to fewer errors and maximising productivity - critical at peak times - and generating savings.

“In a connected warehouse, analytics shows the speed of loading to determine where attention is needed, if SLAs are to be hit. If a truck needs to go in 15 minutes and it’s only 20% full, then we know where to shift resource. This connectivity also provides view and insight into the health and safety of staff when loading and unloading.”

Daniel Dombach,
Zebra Technologies

Samsung is working on producing wearables, sensors, and internet-enabled devices, all designed to make warehouses “smart”. Samsung’s RFID tags allow warehouse managers to know the exact location and progress of any product at any time, whilst their new wearables serve to create a more mobile workforce with access to information on the go, all of which streamlines internal warehouse operations. They will also enable new warehouse management systems to predict accurately, the level of stock required. This means not only are empty warehouses avoided, but so are over-stocked warehouses, Thus, in different ways for each respective scenario, new WMSs serve to provide vast benefits for logistics.



STORES AS DISTRIBUTION CENTRES

For retailers, every store can now be a multi-channel fulfilment centre. The two biggest enablers to this are the right IT strategy and systems, and the culture to help people embrace it.

Now a store manager must be ready to meet not only the needs of his physical customers, but also to be ready to pick available product which is then shipped to fulfil the online orders of customers they never see. It’s a different world.

3PL has to work with customers in new ways, as pick up is in-store and delivery can be to a home or business.

TECHNOLOGY TRENDS OPTIMISING INSIDE NEXT



AUGMENTED REALITY

There is a fundamental disconnect between the wealth of digital data available to us and the physical world in which we apply it. While reality is three-dimensional, the rich data we now have to inform our decisions and actions remains trapped on two-dimensional pages and screens.

Holograms and augmented reality have been all the rage in gaming and popular culture for years. Augmented reality (AR), overlays relevant information (such as sound, vision or tactile data) onto a user's normal sensory input, generally via body suits/gloves, goggles or headphones. Wearable devices that offer a glimpse into the potential future of this technology, are already available. Smart phones, smart watches, and VR goggles show how additional relevant data can be communicated.

For example, stock control data (SKUs, pallet contents, BBEs, etc.) could be

accessed without leaving the warehouse floor, displaying data for on-the-spot planning and organisation.

Essentially, AR enables greater collaboration between systems and workers. As such, all logistics companies ought to consider how AR can ensure all the elements work well together.

INTELLIGENT WAREHOUSE

For customers to be happy, inventory has to be in the right place at the right time. Carry too much of any SKU in the wrong place and you could end up losing money and negatively impacting customer service.

To meet the growing demand for small parcel deliveries, warehouses will transform from a storage location, to a dynamic facility using IoT and voice artificial Intelligence (voice AI). This means faster processing of more shipments to generate a higher

return on the real-estate investment. Just as connected wearable devices such as smartwatches are becoming mainstream in the consumer world, IoT-based technology will create the "smart warehouse" of the future.

AI and real-time analytics for management of warehouse operations, allows a business to anticipate, understand and adapt to the external ecosystem around them (seasonal peaks, weather conditions, etc). IoT will enable inter-warehouse communication to devise cost-effective ways for quicker deliveries and minimise operational inefficiencies.

DRONES INSIDE

While the prospect of drones conducting "flights" for deliveries feels far-fetched, there is immediate application of drones in the warehouse itself.

Within a confined warehouse space inventory checks by drones can be

conducted more often and more accurately, replacing the largely manual process. Beyond locating lost or misplaced items, the drones will use sensors to monitor environmental information such as light or temperature for perishable food, pharmaceuticals or livestock, and raise alerts to unusual noise or movement.

Drones developed by MIT Media Lab serve to combine the IoT with automative robotic technology. Drones are used to pinpoint specific packages in giant warehouses, removing the need for manual scanning. The Hardis Group has developed eyesee; drones equipped with on-board cameras and indoor geolocation technology which can conduct inventory operations without any human presence whatsoever.

Zebra Technologies have introduced patented RFID technology to provide player and item tracking systems in professional sports and as the "Official On-Field Player Tracking Provider" of the NFL, Zebra attaches RFID tags in player equipment to track their movements and provide enlightening and interesting information in real-time. Whilst this application of RFID technology is serving to revolutionise the sports sphere, the applications show how in the near future, logistics operations can be optimised in a similar way; warehouse workers and truck drivers can be tracked on vital stats, whilst training procedures can be optimised to fit data findings, all of which serves to smooth the process for the end user who has access to real-time information on their order throughout.



TECHNOLOGY TRENDS OPTIMISING OUTSIDE NEAR

TELEMATICS

Vehicle telematics technology is advancing fast. In the past, vehicle telematics solutions offered little more than the ability to locate a vehicle on a map. Today's technologies, by comparison, can transmit rich information that offers businesses a real-time understanding of fleet performance. And many organisations are starting to discover just how powerful the benefits of these solutions can be.

Forward facing, wireless cameras transmit vehicle data in real time:

- Safety monitoring
- Gauge maintenance
- Eliminate idling and empty running
- Monitor and plan routes dynamically
- Improve routing

DRIVER'S DIGITAL BUDDY

A hand-held device that connects driver and his vehicle. The driver has information about the route and load and an interface for proof of delivery.

PROOF OF DELIVERY

Outdated and slow paper based proof of delivery methods do not meet the speed and visibility expectations of eCommerce customers and consumers. Sign on glass brings much needed efficiencies, through real time data capture and communication. But this is only a fraction of the huge potential sign on glass offers. An immediate record of delivery time, location and other essential data, is transmitted to cloud. This data is used for immediate processing of time-sheets, invoicing and communication with the customer, enabling informed responses to their queries. The secondary outcome is that the time saved frees up back room resources for the key areas of customer driven focus – such as digitisation, asset productivity, and innovation.

VEHICLE CHECKS

Via hand-held technology, drivers undertake over 70 mandatory checks before a vehicle leaves the yard; essential but arduous. Using tags and integrated software, it is now possible to undertake checks and manage issues from a hand-held device with a driver friendly experience.

Technology plays a vital role in helping fleet managers and drivers cope with modern pressures, enabling businesses to hit targets. Visibility of the fleet and post trip data feedback empowers the transport team to make changes instantly, establish benchmarks and develop training.



In November 2017, Tesla unveiled their new electric semi-truck



TECHNOLOGY TRENDS THE INTERNET OF TRUCKS NEXT

PLATOONING

Truck platooning comprises a number of trucks equipped with state-of-the-art driving support systems – one closely following the other. This forms a platoon with the trucks driven by smart technology, and mutually communicating. The benefits are immediate in terms of cost saving, lower fuel and CO2 emissions, and boosting traffic-flow. A further future benefit of such a system, if combined entirely with the internal sensors in trucks, would be to prevent rear-end collisions; the Highway Pilot Connect system reacts in less than 0.1 seconds, compared to a human

500,000 Daimler trucks around the world are connected via FleetBoard and Detroit Connect systems; 400 sensors in each truck register data of all kinds. This not only facilitates platooning but it could also solve the problem of 25% of European truck mileage being on empty journeys.

reaction time of around 1.4 seconds. Platooning technology is advancing rapidly as vehicle manufacturers and motor carriers increase testing on public roads.

Daimler's new interconnected systems with 400 sensors, more than a passenger jet, also have the benefit of providing key truck maintenance services such as the avoidance of breakdowns, efficient management of repairs and maintenance and real-time support for repair measures.

ELECTRIC VEHICLES

Current vehicle usage is still largely non-electric but investment for the near future appears to favour electric over autonomous. Partly driven by legislation such as London's new toxicity charge (T-Charge which came into force in October) and plans for an Ultra Low Emission Zone which have been brought forward to 2019.

ROYAL MAIL GOES ELECTRIC:

- July 2017 – 100 plug in Peugeot vans arriving in December 2017
- Royal Mail operates largest fleet in UK
- Currently trialling several types of electric vehicle – from small vans up to 26 tonne lorries

COCA-COLA'S ALL ELECTRIC TRUCKS:

- Trucks running up to 100 miles per charge
- Can be fully recharged in six to eight hours

SEMI-AUTONOMOUS TRUCK CONVOYS DUE TO HIT UK ROADS

August 2017 – Department for Transport and Highways England announced convoys of semi-autonomous trucks are expected to be tested in UK

"The new world is about electric drive train."

Carl Hanson, Fleet Director
Wincanton



IBM's enterprise asset management solution, Maximo, provides warning signals from assets which benefits business and end users by reducing unplanned downtime, increasing operational efficiency and streamlining the process of taking goods from the warehouse to the consumer's door. Royal Boskalis Westminster, Netherlands-based dredging and marine experts, have found that using Maximo has allowed them to increase their profits by increasing asset uptime and reducing inventory costs.

THE AGE OF THE COMBUSTION ENGINE IS COMING TO AN END

TECHNOLOGY TRENDS OPTIMISING PEOPLE NEAR

Ken Goldberg, professor of engineering at UC Berkeley, talks of a “multiplicity workforce” which refers to a hybrid workforce comprised of a diverse group of robots and humans working together.



In some areas there is a happy confluence, such as a diminishing driver workforce being superseded by automated delivery solutions. But elsewhere there will be more need for skill sets that, historically, have not been required.

Logistics is about people, and that is a valued heritage which will not be pushed aside by technology.

Certainly jobs will change in vehicles, warehouses and distribution centres; traditional repetitive tasks requiring little expertise will reduce. Redefining the place of the human worker within a more technologically advanced environment will be vital. For example, automated pick and pack solutions will mean fewer warehouse operatives, but new skills and working practice will be needed for humans and machines to comfortably co-exist within the logistic industry.

Technology is playing its part in creating better and safer work environments and processes.

Experts are improving existing work, through health and safety procedures and wearable biometric technology. These ensure drivers are in the best of health when in charge of vehicles, and warehouse employees are working to their optimal capacity, in an environment with facilities and smart use of space to make work a bit easier.

The internet has evolved into the primary vehicle for communication, information and communities. The rise of mobile technology and social media is an opportunity:

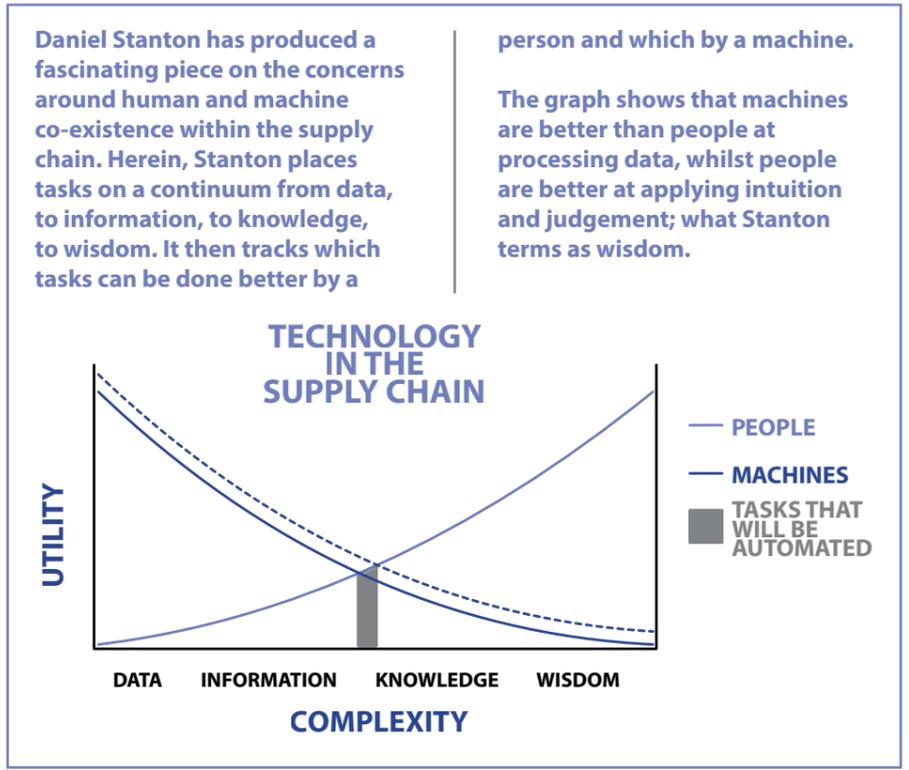
- to empower people to adopt technologies that benefit the business and individual staff
- to create stronger internal networks of sharing, expertise, innovation and community for employees
- to source the right people at peak times and when more hands are necessary

The dystopian ‘robots are coming’ chatter overlooks the fact that logistics has always turned to technology to augment the available labour pool.

Warehouses continue to be sought in regions of good population density with capacity for employee parking and access to public transport.

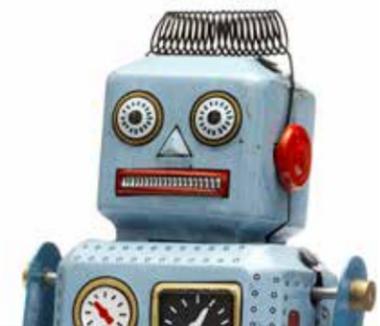
In addition to recruitment, the whole sector will need to become more proactive in training, encouraging transferable and future-proofed skills to ensure an engaged and productive work force.

Central to this will be the development of technically proficient workers. Low-skilled roles will diminish markedly and ICT-related knowledge will be vital. To attract the next generation of talented logistics employees, we must create an attractive, digitally enabled environment, where people feel empowered and free to collaborate.



eCommerce has created a new problem; as returned goods have an impact on the bottom line. Innovative reverse logistics are handling the management of returned, damaged or obsolete items for customers. The value of human beings is evident in the return process. Machines have yet to develop the subtle understanding needed to determine if refund, repair or re-enter inventory is the outcome. Warehouses taking advantage of automation and robotics for repetitive tasks can also have new dedicated spaces populated with human specialists to manage returns.

We know humans have an ability that cannot be mimicked by machines in the near future. This is a result of countless generations of interactions. We have empathy that generates warmth, an ability to share, collaborate and reach out to others. Machines will free up time from repetitive and physical tasks, to allow humans to do what humans do best. Softer and creative skills powered by human intuitions, emotions, and interactions will allow us to see more, think differently and add greater value.



TECHNOLOGY TRENDS HORIZON



CONNECTED CITIES

Several cities have a number of projects running on interconnected platforms through wireless devices, though very much at an experimental stage. Thus, for logistics, connected cities is something to be aware of, but not a primary focus, for now. Though not within the full scope of this report, it is worth touching on the potential benefits of smart cities which will be seen in the years and decades to come. One benefit will be further optimised truck journey time, as routes will be planned and rerouted in line with data from smart traffic lights. Additionally, such interconnectedness creates an environment which encourages collaboration; for example, between charities and private businesses sharing transport routes in return for tax cuts.

AUTONOMOUS VEHICLES

The future for autonomous vehicles seems bright and with good reason; truck platooning and the more widespread



Autonomous electric vehicles have long been a staple of predictions of the future, as seen here in "America's Electric Light and Power Companies," Saturday Evening Post, 1950s.

use of autonomous vehicles will remove human error from our road network. This, and more connected road transport systems with the IoT coordinating the routes of all vehicles on the roads clearly

has some quite powerful benefits in terms of both congestion and accident reduction. It is difficult to put a date on when we will have achieved such an integrated network, but such high connectivity is unlikely to be seen within the next five years, because of ethical and practical concerns regarding autonomous vehicles. For example, there are concerns about how best to program a vehicle's response in the event of a collision, as well as practical concerns surrounding the continued need for drivers, particularly delivery drivers to get items from the truck to the door, and the more pressing need for massive investment in the infrastructure, which would support development of such a transportation framework.

3D PRINTING

This potentially disruptive technology is talked of as the death of factory manufacturing. The logic for using 3D printing for prototypes is compelling. Traditional 'reductive' manufacturing techniques (where materials are removed) can take longer and are much more expensive. For logistics, the potential lies more in its capability to simplify production of customised products and spare parts. Limitations to 3D printing processes, such as restrictions on materials, speed, and a lack of working knowledge, could be the reasons why it might take longer for the process to be fully adopted. However, with advantages such as greater personalisation, fewer waste products and greater benefits for the environment, and localized manufacturing and delivery, research suggests supply chain managers are increasingly looking to invest in the method.

A WORD ON TOKYO

The recent Olympic games have taught us that every four years, there is an opportunity to make a mark on a specific issue; 2012 was the Olympics that really placed an emphasis on the Paralympic games. Tokyo, the futuristic city, has a track record in this regard; in 1964, when Tokyo last hosted the Summer Olympics, Japan revealed the debut of the world-famous bullet train that has since become a Japanese icon.

Japan is already one of the most automated nations on the Earth, thus it is no surprise that there is a government committee working towards launching a program to install robots around the city in a "robot village" which will also be home to the athletes' Olympic village. As well as this, robots around the city will provide language translation, directions and even guide

people to transport; perhaps by then, the transportation itself could be robotic, self-driving cars. The positioning of robots in Japan will provide scope for some interesting observations in terms of how people interact with the robots, something mentioned above in the section on co-existence. Other proposed technologies include hydrogen cars, electronic ticketing systems, facial recognition technology to verify ticket holders and a security system that uses tens of thousands of cameras and sensors, a system being developed by Panasonic. A point to note however, is that such high-tech innovations are not cheap; by some estimates, the Tokyo Olympics could cost up to \$18 billion, colossal compared to the £8.77 billion spent for London 2012 and \$5 billion spent for Rio 2016.



TECHNOLOGY TRENDS
NEAR, NEXT, HORIZON...

HORIZON

**AUTONOMOUS
VEHICLES**

**CONNECTED
CITIES**

3D PRINTING

NEXT

DRONES INSIDE

**INTELLIGENT
WAREHOUSE**

BLOCKCHAIN

**AUGMENTED
REALITY**

**PROOF OF
DELIVERY**

**DRIVER'S
DIGITAL BUDDY**

NEAR

**INTELLIGENT
WAREHOUSING**

**HEADS UP
DISPLAYS**

TELEMATICS

PLATOONING

**AUTOMATION
AND ROBOTICS**

**VEHICLE
CHECKS**

LEADERSHIP AND CULTURE

LEADERSHIP AND CULTURE TECHNOLOGY ALONE IS NOT THE ANSWER

"A man without imagination, he has no wings"

Muhammad Ali

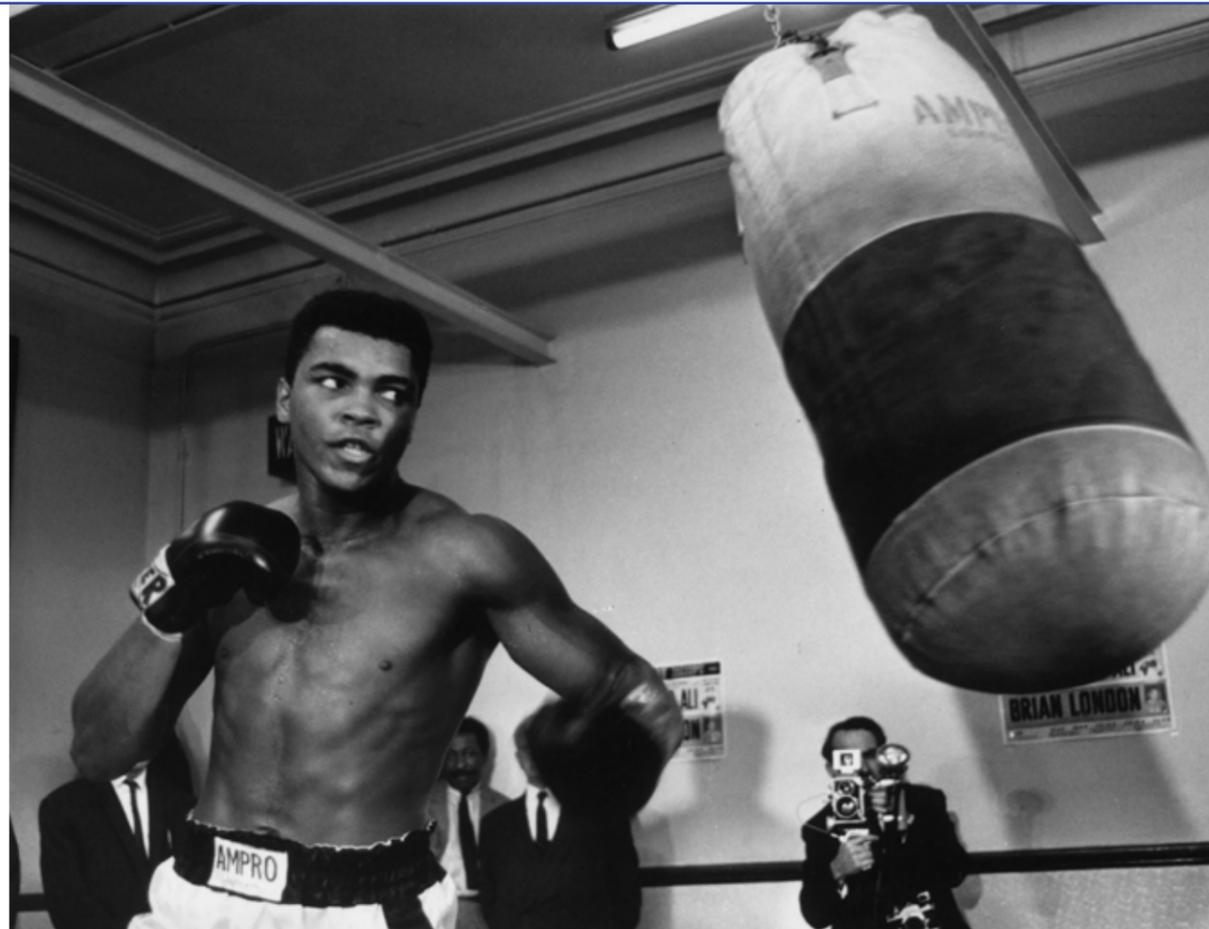
LEADERSHIP AND CULTURE CULTURE NOT TECHNOLOGY, DRIVES CHANGE

The majority of digital transformation programmes fail.

Technology is an enabler, not the solution.

People are the most important determinant of success.

We need imagination, fast and quick pace isn't enough...



Technology alone does not drive digital transformation. There are many strands to business transformation: leadership, people, process and, of course, technology. We might like to think technology changes culture, but the harsh reality is that technology only enables cultural change.

IT is not responsible for digital transformation. This is not a tactical debate about who manages IT, but a leadership conversation on the threats and opportunities that technology drives.

Digital transformation is only truly effective when an organisation embraces it completely and re-shapes the way it thinks and acts.

The desire to change, and the support required to enable change, must come from within an organisation. It cannot be achieved by IT, we have to reach across boundaries. The operations and marketing leaders, together with the CEO, must build a unified strategy. Leaders were expected to be financially

literate, despite working with financial specialists, they are now increasingly expected to understand digital and work with experts.

"Digital is the collective responsibility of the C-suite."

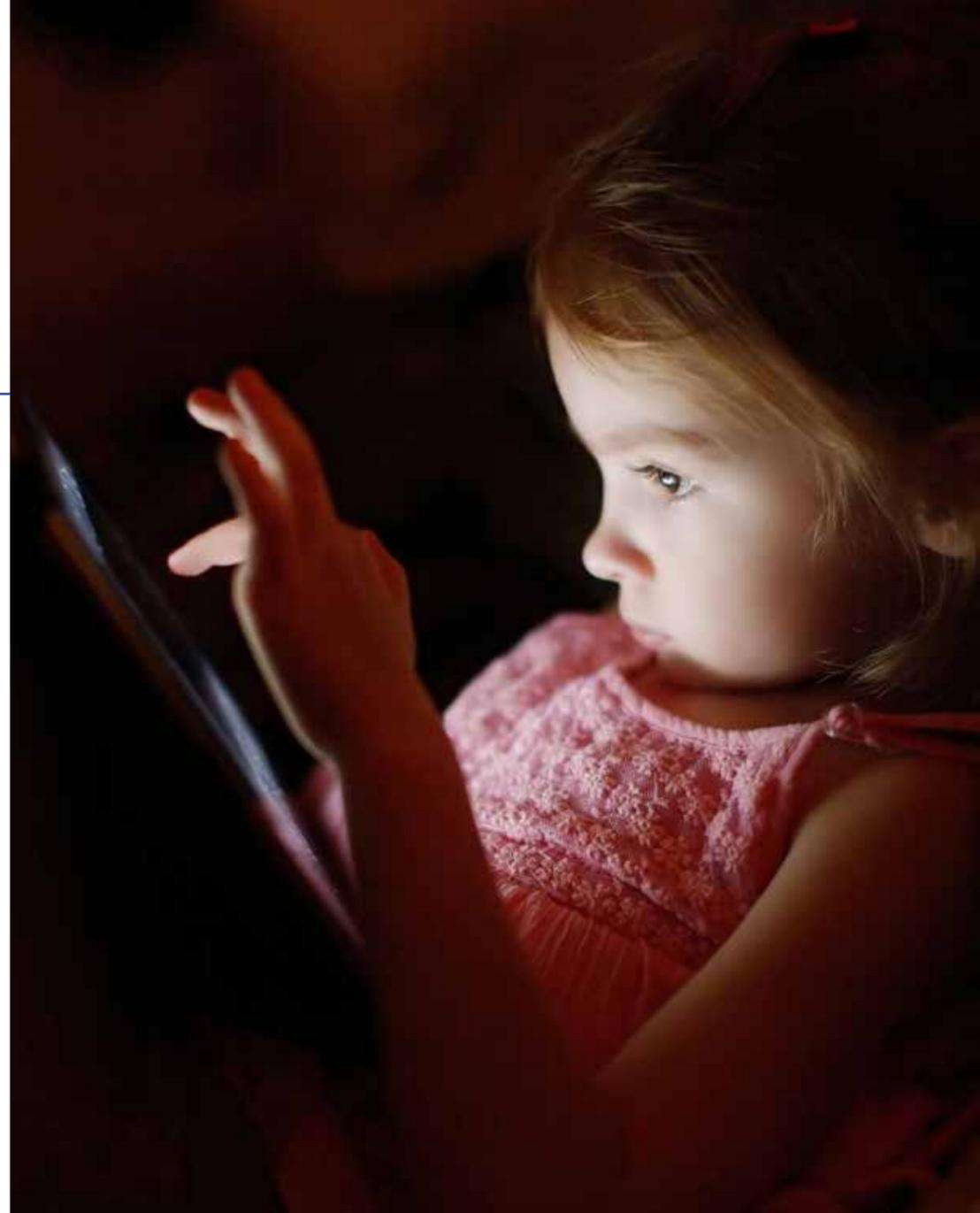
Jorge Gouveia, Managing Director
Russell Reynolds

- **Data collection relies on technology**
- **Analytics and insight calls on talent**
- **Aligning decisions and action is dependent on organisational commitment**

"Technology is no longer acquired only by IT, the business owner plays a big role. There is a shift in responsibility."

Daniel Dombach, EMEA Director
Zebra Technologies

Strategy , not technology, drives transformation.



LEADERSHIP AND CULTURE

DIGITAL IS A SYSTEM CHANGE BY LEADERSHIP

Digital leadership breaks down barriers and penetrates silos, which improves integration and collaboration.

Successful digital strategies require an integrated approach with clearly delineated governance and decision rights, and shared vision and responsibility. Only by seeing the bigger picture can we use technology trends to become demand driven, optimising all assets, and delivering the best experience.

Don't let the tail wag the dog!

- We must embrace digital - its reality and opportunities - and recognise how it contributes to behaviour, rather than seeing it as an IT problem to be solved.
- Overcoming tension created by technology in our organisations
 - Sharing visions and responsibility
 - Promoting customer-experience led thinking and culture

Resistance is the enemy of change. Behavioural biases in judgement and decision-making affect humans in many situations, and digital transformation is no exception.

- 1. Planning fallacy: peoples' tendency to make overly optimistic predictions about the resources it will take to complete a future task or project.**
- 2. Group think: people's tendency to be influenced by the opinions and actions of others when operating within a group.**
- 3. Status quo bias: resistance when faced with conflicting choice leads people to accept the status-quo, as reflected**

- in the old adage, "when in doubt, do nothing".**
- 4. Sunk Cost fallacy – people's tendency to make decisions based on project costs (including time, effort and money) that have already been incurred, cannot be recovered and have no impact on future outcomes.**
 - 5. The worst aspect of procrastination is that it can become a habit. We need leaders who are willing to undertake initiatives that will stretch them. Only by venturing into uncharted waters, are we compelled to explore the unrealised skills and talents within our organisations.**



LEADERSHIP AND CULTURE

DIGITAL BEHAVIOURS

Digitally mature organisations exhibit certain organisational similarities and leadership behaviours that have nothing to do with technology.

1. Their leaders are change agents; they are forward-looking, have a transformative vision and are focused on change and collaboration.
2. They promote a dynamic internal culture which encourages risk taking and agility.
3. Small experiments are scaled into enterprise-wide initiatives, as leaders are disciplined in funding these ideas, and in the face of more immediate investment demands. The tolerance for failures and ability to learn from them underpins this.
4. They are magnets for talent through their understanding of the need to place a premium on attracting and developing digital talent. Their development efforts often go far beyond traditional training.

RUSSELL REYNOLDS: PRODUCTIVE DISRUPTORS RESEARCH

Difference between leaders and other senior executives



Digital leadership is transformational leadership.

LEADERSHIP AND CULTURE
COLLABORATION
COLLABORATION
COLLABORATION

Successful digital transformation is plagued by contradictions. A fundamental one is the need to act as an established, grown-up business, while demonstrating the energy, flexibility and experimentation of a start up.

Successful transformation is dependent on collaboration across teams and siloes, but it does not stop with internal teams.

Customers are asking for logistics partners to stretch their thinking and identify unknown and yet to be proven ways to improve the experience. Operational excellence is now considered to be a hygiene factor, not a differentiator.

History shows us that our success and dominance over all other species on this planet lies in our ability to co-operate flexibly in large groups.

- Expanding knowledge quickly
- Preserving knowledge gained over generations
- Building on past knowledge to gain even greater insights.

WORKING WITH EXPERTS - W² LABS

The digital supply network relies on primed logistics partners, who appreciate the need to work with experts. W² Labs is Wincanton's investment that brings fresh thinking to the supply chain. We have sought out specialists and innovators who have addressed specific challenges within the ecosystem.

Start ups are a source of new technology, but also new ways of working. W² Labs asks our experts across the business, to look again at what they know and be ready for challenge from outside the sector.

In a period of constant change, who can be an expert in everything? But we can have all the expertise we need, within our ecosystem.

Failure to innovate through collaborative methods is one reason companies like Blockbuster, Kodak, Pan-Am and HMV all failed to reinvent themselves. We must ask how to minimise risk and reduce the fear of shifting away from the status quo.

It is the responsibility of leaders to enable, educate, and guide customers and partners as they adapt and change.



LEADERSHIP AND CULTURE
OUR COMMITMENT TO
COLLABORATION

In March 2017, Wincanton launched our first start-up accelerator, W² Labs, which has been a ground breaking programme for the company. Through our work with over 20 start-ups and our customers, the programme has accelerated our process for bringing innovation to our industry; innovation which will help us provide new services for our customers. From the strong initial response from start-ups around the world to the passion and energy of our 6 finalists, we've learnt how to leverage our large business to become a development environment where good

ideas become good business in weeks, not years. Because we're open to new ideas and new ways of working, we now



collaborate and learn alongside each other to deliver both new products and services as well as embracing new perspectives on our industry.

For example, as a result, of W² Labs, we now have a number of brand new propositions which solve problems for our customers, for their customers. They cover everything from using e-marketplaces to collaboratively sharing assets, to dynamically extracting large quantities of actionable data from trucks travelling across the country to help predict traffic flows, and the foundations of a wholly new approach to Returns which consolidate, refurbish, locally redistribute, recycle, destroy or even resell stock internationally.



LEADERSHIP AND CULTURE

DIGITAL CULTURE IS NOT A PROJECT

In a mature industry like logistics, change is not easy.

Factors such as lack of leadership endorsement or absence of incentive for employees to buy into a new culture can hold back success.

To achieve genuine transformational change across an entire company, a bottom-up approach will simply not work. Encouraging the workforce to think beyond their immediate teams is only half the battle. It's essential to motivate employees by providing intuitive and accessible tools, just like the ones they rely on daily to manage their lives.

Providing opportunity and culture that is collaborative and problem solving is not only empowering for existing employees but also attractive to the next generation of digital natives.

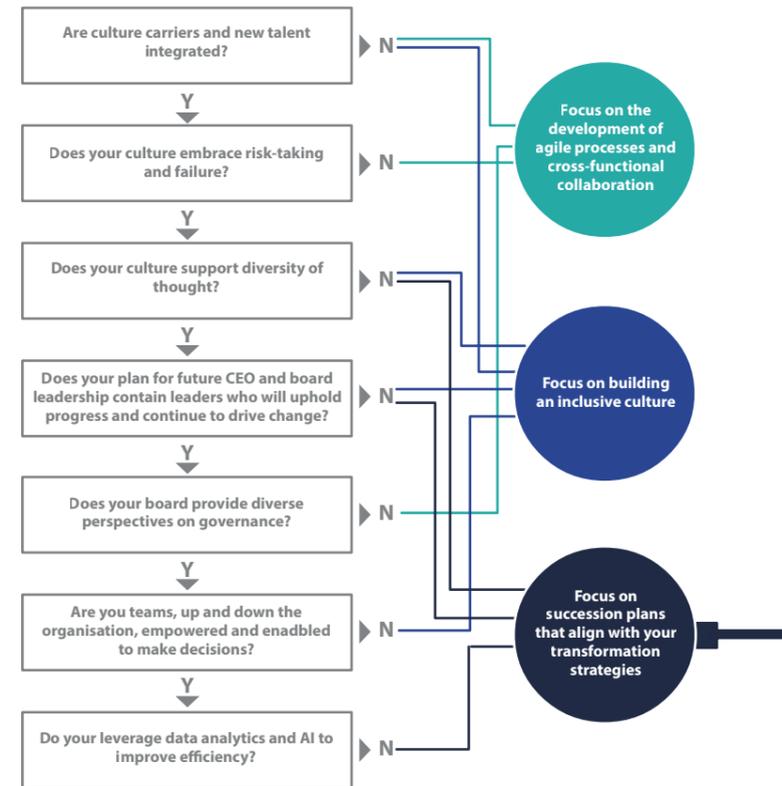
The companies that succeed will be those with agile and flexible cultures that make it easier for people to work together across internal boundaries, to deliver on a shared purpose.

Leaders shouldn't assume that digital transformation "programmes" have a beginning and an end. They don't.

To remain competitive, organisations must be continually seeking to improve and innovate.

Culture must be put to work.

RUSSELL REYNOLDS: DRIVE CULTURE CHANGE



"Everyone loves change, except the change part"

Alan Kay

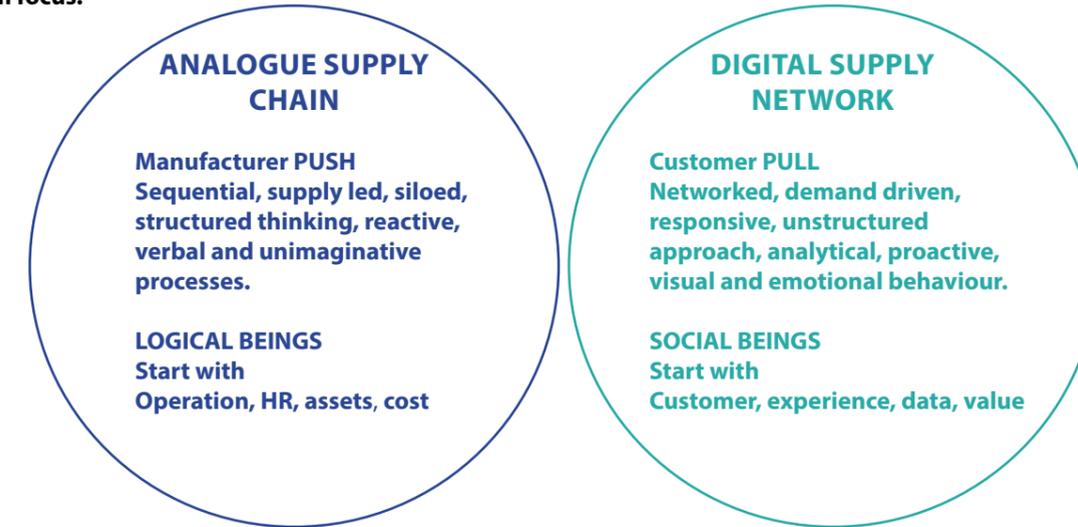
"Never change things, by fighting the existing reality. To change something, build a new model that makes the existing model obsolete."

Prof Buckminster Fuller

LEADERSHIP AND CULTURE

SYSTEM CHANGE BY LEADERSHIP FROM LOGICAL TO SOCIAL

Logistics is a digital business and the IT systems, processes and behaviours should reflect the customer experience and ecosystem focus.



"Behaviour builds trust. Customer experience is a behaviour."

John Glasworthy, CTO
360 Globalnet

Achieving the vision of a digital future requires an organisation to work in fundamentally different ways.

If a unified understanding of customers and technology is lacking, companies struggle to empower employees around integrated touch-points, journeys, and consistent experiences. This makes it difficult to know how to deliver the best experience.

Nietzsche said life is a question of choices. And he was right: the choices we make define us. Even refusing to make a choice is a clear statement of intent.

Logistics providers will need talent, organisational structure, and culture if they are to be in sync with the digital environments around them.

PRIMED FOR ACTION

PRIMED FOR ACTION
**IF WE ONLY HAD
120 SECONDS...**



02:00:00

Our digital world is re-imagining the supply chain and 3PL experience. Logistics heritage as linear supply led chains, has been surpassed by customer driven demand with fluid and transient start and end points. This demand is based on the high standards established by digital businesses. Every thought and action must begin with customer expectations. People are impatient, seek control in all their transactions, have high standards, and are ready to look for alternatives. An easy, transparent and traceable experience delivers trust.

01:46:00

Data and the Internet of Things are defining logistics moving forward. Data blend the physical and digital realms, fundamentally shifting the way we interact with our surroundings. Businesses generate data with every transaction they make, but the vast majority of this data is left untapped. Data is the fifth asset for logistics. The ability to monitor and manage objects in the physical world electronically makes it possible to bring data-driven decision-making to new realms of human activity—to optimise the performance of systems and processes, saving time for people and businesses. Data fuelled insight delivers experiences that create value and differentiation. New organisations are entering this space with no assets other than customer and data led experience.

01:17:00

Logistics is no longer an isolated chain we can control single handedly. A fundamental shift from a linear way of thinking to a networked and systems-led way of working, is becoming the norm. We are now all part of an ecosystem which gives us access to assets and expertise beyond the reach of a single organisation. The sharing economy has arrived with the momentum of a rocket, and logistics can truly benefit from this when tackling the inefficiencies of unused capacity and achieving greater economies of scale. When customers and partners share data, can we generate new insights, open new opportunities and deliver happier customers?

00:49:00

Embracing digital requires an organisation to work in fundamentally different ways. The old ways of working are standing in the way. To create momentum, we need to be connecting people looking at the same data together so they can quickly make decisions that will make things flow quickly through the system. When that happens, customers are happier, sales increase, and more working capital is available.

00:27:00

And it starts with leadership. Leaders should champion a culture people flourish within and technology enables. Behaviours that support collaboration, experimentation and empathy with customers must be embraced. There is a transition from logical to social, which is essential for integration and humanisation. It is essential for business leaders to coordinate culture, technology, investment, and talent across both space and time. This should not be seen as a discrete project but an ongoing challenge, for every organisation.

The pace of change is only going to accelerate, and the impact of that change will be more far-reaching than it is possible to imagine. It's time to find our place in the supply network and deliver according to demand not supply.

00:00:00





ADRIAN COLMAN, CEO WINCANTON PLC
CLOSING WORDS

I hope that you have found something useful from this guide, and if you have, please don't hesitate to talk to us about it. We'd really like to understand it from your perspective and see how we can take it from idea to execution. After all, our heritage shows how we've been adapting to change for more than 90 years, and we don't intend to stop now!

The wide spectrum opportunities in the digital world excites us all, and as an example, our unique W² Labs programme has been creating new, all-digital, capabilities for us and our customers alike. It has also reinforced our approach to the innovation culture that we have in our business, because we all know that "business as usual", focusing wholly on marginal improvements, will not get the job done.

We are committed to building and leading teams, which keep people connected and engaged, and drive a culture of innovation, learning, and continuous improvement.

At Wincanton, our leaders are driven to combine their inherent curiosity with a strong desire to engage in projects where mutual success requires the boldness to take on new, untrodden pathways.

Our bold leaders do not separate business priorities from digital strategy. The fundamental nature of leadership has not changed, but rapid development and deployment of digital technologies means that the expectations for leaders are evolving, and our leaders will need to be curious about every facet of it. Everywhere, leaders will soon be

as comfortable engaging in digital conversations, as they are in financial ones, or in their own areas of expertise.

Wincanton is full of curious, bold people, ready to engage in developing new and better solutions, but always aware of the fact that we have to deliver for our customers, every day.

We look forward to working with you all,

(insert signature)

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