Networks, the invisible engines

From AI-powered automation to cloud migration, every major business transformation hinges on the strength of its network. Here's why.

verizon
business

The networked
enterprise, explained

For most of the 20th century, the dominant metaphor for business was a factory – Fordist, centralized, predictable. Everything was arranged in straight lines, from inputs to outputs, raw materials to assembly to final product.

Then the metaphor changed: now, business is a network. The most successful enterprises today aren't factories, not really. Instead, they're dynamic constellations – many moving parts, all interconnected, powered by an infrastructure that is at once invisible and utterly indispensable.

Why networks are now critical to business transformation

Every major business transformation depends on one fundamental element: the network. Organizations can only move as fast as their connectivity allows.

- **AI and automation are network-dependent:** AI-powered operations, from predictive maintenance to real-time fraud detection, rely on high-speed, low-latency networks to function effectively.

- **Cloud adoption is, too:** According to PwC, 78% of companies use cloud services in some capacity.[1] Overall, businesses are shifting away from traditional IT infrastructure. This shift means that network performance directly impacts how well things operate.

- **Customers expect to deal with connected businesses:** Shoppers want the convenience of knowing their items are available, business customers want to know their parts are on the way or their insight dashboards are up to date. This means enablers like real-time inventory management are dependent on always-on, high-performance connectivity.

If this seems like hyperbole, consider the following: in 2025, every significant business process – supply chain logistics, customer engagement, workforce collaboration – is contingent on secure connectivity.

1. PricewaterhouseCoopers. (2023). The Cloud - most businesses use it, but are they using it to its full potential? - PwC UK. PwC. https://www.pwc.co.uk/issues/value-creation/insights/unlocking-value-of-cloud-investments.html

As Fred Walker, Associate Director of Global Solutions, Verizon Business, notes, "If networks are the way to organize business, then you need the digital and connectivity infrastructure that empowers that way of working." And yet, not all networks are equal. Not all are secure. Not all are built for the staggering demands of AI, automation, and real-time decision-making. This is precisely why network quality isn't just a technical concern – it's a business imperative.

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Not all networks are created equal

To keep a network running, you need more than just connectivity – you need the right services and an operator with control over its infrastructure. Verizon offers enterprises a sophisticated range of network and managed services for the hyper-connected digital business. Enterprise needs typically extend beyond a unilateral approach to connectivity with hybrid users, IoT, corporate offices, retail locations, production facilities, data centers and cloud connectivity all having their own unique requirements. However, the common denominator is often the need to maximize application performance for users and machines. Verizon has built a fully converged, fully meshed, private IP backbone from which organizations can consume integrated connectivity services based upon need, architectural preference and price. The converged, private backbone inherently (due to its design) offers organizations

the security, reliability, scalability and network architecture efficiency that today's organizations need, as bandwidth requirements fluctuate dynamically and data creation increases exponentially.

Verizon network services are adaptable and flexible, improving operational efficiency with native ITSM integration. AIOps deliver the visibility and control needed for efficient network management and agile response to business changes. Automated incident and change management promptly resolves issues and service requests, offering dynamic bandwidth services for capacity that flexes with your needs.

There's a fundamental difference between the open traffic of the public internet and the structured, intentional architecture of the Verizon Network. Verizon operates one of a limited number of Tier 1 networks globally, meaning it has direct control over its infrastructure rather than relying on third-party routing. This is incredibly important for organizations running business critical applications across a public internet-based service: where data traverses Tier 2 and Tier 3 IP networks, data would typically be passing through more network interconnects and across circuits with higher oversubscription rates, both of which can have an impact on the performance of delay sensitive applications. The confidence Verizon has in its network is backed up by industry-leading SLAs which are only possible because it can guarantee the performance and resiliency of its backbones.

- **Security:** As businesses adopt more interconnected approaches, securing data flow and maintaining its integrity becomes essential. A resilient network infrastructure must accommodate large volumes of data without compromising security. To answer this call, top-tier cybersecurity measures – like Data Loss Prevention (DLP) tools, Intrusion Detection Systems (IDS), and regular security audits – are equipped to safeguard sensitive information.

- **Performance:** Low latency and high bandwidth mean mission-critical processes happen in real-time.

- **Resilience:** Redundancy and failover mechanisms ensure continuity, even in times of disruption.

- **Compliance & Regulations:** When data travels across multiple borders there are local regulations and compliance protocols to address. Understanding exactly where and how your data moves ensures compliance is maintained whilst mitigating the risk of exposure and costly fines.

Many enterprises have heavily invested in legacy infrastructure, making an abrupt transition to new network models unrealistic. You may be locked into long-term contracts or managing hybrid environments that mix legacy and modern solutions. Verizon Business recognizes this challenge and provides a flexible, phased approach to transformation. With a breadth of portfolio offerings and strategic partnerships, businesses can evolve their networks at their own pace – providing continuity while adopting next-generation capabilities to enable your transformation.

According to McKinsey, fully networked companies – intensively using Web 2.0 technologies – are more likely to be market leaders and achieve higher profit margins.[2] This underscores the competitive advantage of businesses that invest in resilient, high-quality network infrastructure.

In a world where milliseconds determine success, network performance is now a competitive advantage. Businesses that invest in high-quality connectivity are doing something other than keeping up; they're leading.

2. The rise of the networked enterprise: Web 2.0 finds its payday | McKinsey. (n.d.). www.mckinsey.com. https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-rise-of-the-networked-enterprise-web-20-finds-its-payday

According to Dennis, the success of edge deployments depends on a resilient, high-performance network, whether it be 5G, wireless or wireline. Without ultra-low-latency connectivity, edge environments risk becoming fragmented bottlenecks rather than efficiency drivers. Verizon's network solutions ensure enterprises have the bandwidth, security, and reliability required to fully leverage edge computing's potential.

As businesses hurtle towards a future dominated by AI, edge computing, and hyper-automation, the question isn't whether they need high-quality connectivity – it's whether they can afford not to have it.

5G & Private Wireless Networks

One of the biggest benefits of 5G technology is its ultra-low latency, which enables real-time applications like industrial automation, autonomous vehicles, and augmented reality. But when you take it a step further with a private 5G network, you keep the network localized to a specific site – whether that's a factory, campus, or industrial facility.

"In a 5G world, private networks will power the next era of connectivity," says Sanjiv Gossain, Vice President & Head of EMEA Verizon Business. "This tailored, high-performance network can give businesses a powerful competitive edge."

A report from McKinsey highlights that by 2030, 5G technology is expected to boost global GDP by approximately $1.2 trillion to $2 trillion, particularly impacting sectors like healthcare, mobility, manufacturing, and retail.[3] This economic shift underscores why businesses must invest in network infrastructure today.

Enterprise at the edge

The integration of advanced analytics is critical to delivering operational efficiency and the intelligent edge is becoming more and more complex, covering WLAN/LAN, Private 5G, Edge Computing, IoT and AI/ML to name a few technologies.

"Edge computing will become a cornerstone IT strategy that brings real commercial advantages – empowering real-time data processing and faster business decision-making," explains Dean Dennis, Managing Director of Global Solutions, Verizon Business.

3. McKinsey 5G report highlights a connected future. Retrieved from https://www.mckinsey.com/~/media/McKinsey/Industries/Technology%20Media%20and%20Telecommunications/Telecommunications/Our%20Insights/Connected%20world%20An%20evolution%20in%20connectivity%20beyond%20the%205G%20revolution/MGI_Connected-World_Executive-summary_February-2020.ashx

The new pace of digital acceleration

Digital transformation is nothing new. What's changed is the pace. AI and automation are no longer tentative experiments; they're foundational. Cloud computing is now the default. But here's the catch – connectivity determines whether any of this actually works.

Digital transformation is about managing complexity. Enterprises must balance innovation with the realities of legacy systems, security concerns, and operational continuity. Verizon's managed solutions help businesses navigate these challenges, providing the flexibility to integrate AI, automation, and cloud services without disruption.

AI in manufacturing, for instance, isn't some abstract promise. It's real, measurable, and happening today: machine learning models at BMW are identifying paint defects before they leave quality control.[4] However, this machine learning and AI capability is dependent on reliable uploading of data from cameras to computers housing the AI which can then provide real-time feedback on the production line quality. BMW sees this as a key part of the digitalization of production.

"The convergence of artificial intelligence (AI) and edge computing is unlocking new possibilities for real-time data processing and decision-making," explains Massimo Peselli, Chief Revenue Officer, Global Enterprise & Public Sector, Verizon Business.

Deloitte's Global Intelligent Automation Survey found that 74% of enterprises have already implemented robotic process automation (RPA), with another 46% planning to implement AI within the next three years.[5] As businesses continue scaling automation, network performance will determine their ability to compete.

4. BMW Group applies AI solutions to increase paint shop quality. (n.d.). Www.press. bmwgroup.com. https://www.press.bmwgroup.com/global/article/detail/T0307724EN/bmw-group-applies-ai-solutions-to-increase-paint-shop-quality?language=en
5. Automation with Intelligence Deloitte Insights (2022) https://www2.deloitte.com/us/en/insights/focus/technology-and-the-future-of-work/intelligent-automation-2022-survey-results.html

AI, automation, and big data

The phrase 'data is the new oil' has been thrown around so often that it has almost lost its meaning, but the core truth remains many businesses are thriving now because of their ability to harness and act on data.

"We're applying AI and machine learning to the center of our network, using that data to make quicker decisions and provide AI insights for our customers. We are now starting to move these capabilities to the edge of our network to support our customer," says Fred Walker. "Customers are deploying AI/ML across manufacturing, retail, logistics/distribution, healthcare, and beyond, with these customers becoming data-led."

Data is only valuable if it moves. Supply chain visibility, predictive analytics, and customer intelligence all demand a level of data fluidity that can't be achieved through disjointed, siloed network architectures. Enterprises must think beyond mere data collection – they must consider how seamlessly and securely data can travel across their ecosystem. Without an intelligent, adaptive networking backbone, data lakes become stagnant swamps, and AI models are left hungry for real-time inputs.

The combination of IoT and Generative AI is generating an unprecedented surge of data. In an increasingly data-driven economy, organizations that can efficiently manage and leverage this swell of info will have a competitive edge. The network infrastructure dictates how quickly and efficiently this data flows into AI and machine learning workflows. As data volumes continue to increase, businesses must invest in advanced data management platforms – and, critically, in network infrastructure that can support them. A robust, high-performance network is essential for organizing, processing, and delivering real-time insights at scale.

The risks of falling behind

New technology doesn't necessarily just offer opportunities – it can create vulnerabilities. AI, IoT devices, and cloud applications all demand vast amounts of data, and wherever data travels, risk can follow. Cyber threats are no longer lone wolves but well-funded organizations deploying generative AI to probe for weaknesses.

Indeed, AI, machine learning, and automation are the new scaffolding of modern business. Organizations relying on subpar networks are potentially playing a high-stakes game with security, unaware of just how thin the ice may be beneath them.

Many organizations are looking to a zero-trust security model. Zero trust requires continuous verification of identity, device security, and access privileges before granting access to critical data. This transition not only helps enhance protections for sensitive applications but also ensures that only authorized personnel can access critical data, helping to mitigate the risks associated with insider breaches and unauthorized access.

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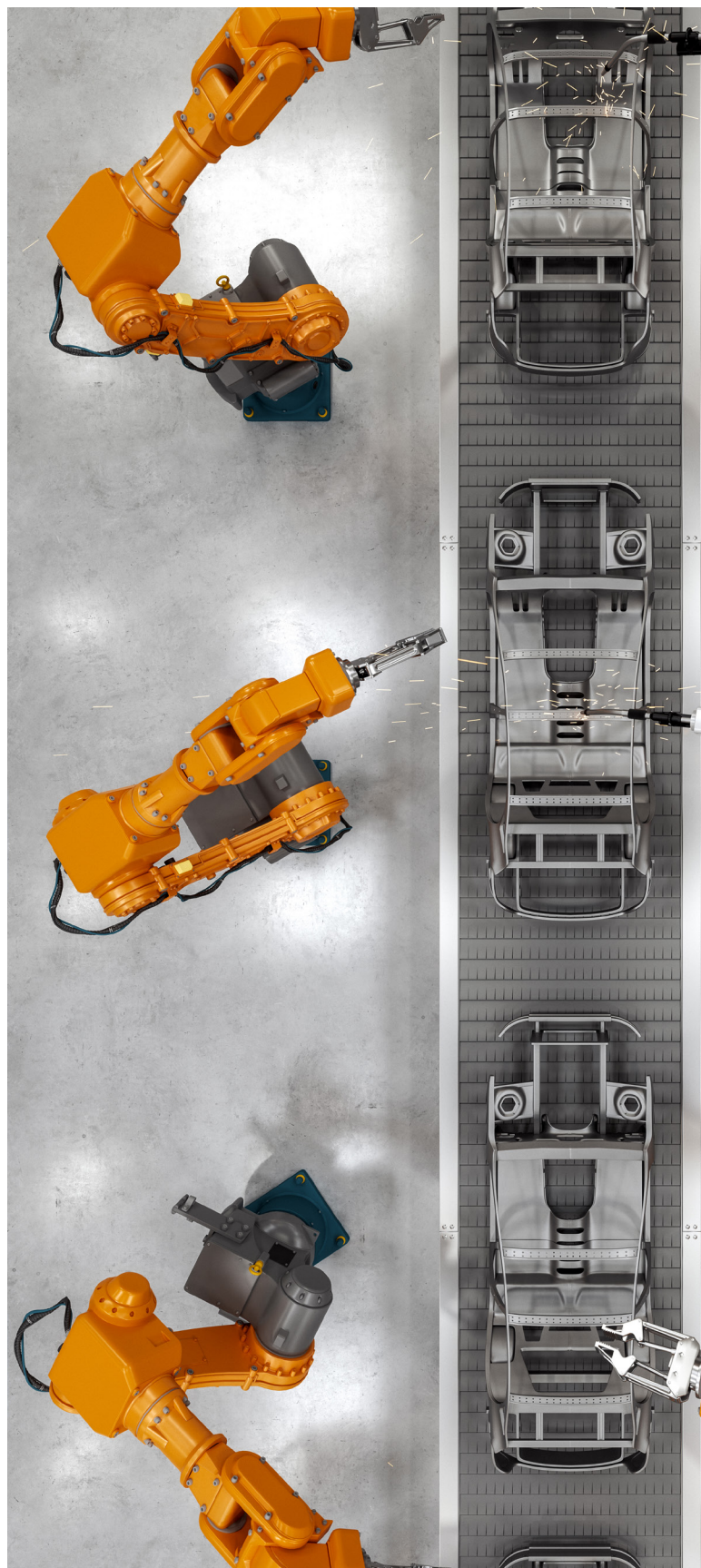
What does a networked future look like?

The next great business battleground will not be fought in boardrooms or marketplaces but in the invisible terrain of networked infrastructure. The modern enterprise is no longer a place, but a system. A business is an ecosystem, where supply chains, remote teams, AI-powered operations, and digital customer experiences all converge; they all depend on the seamless flow of data.

The companies that thrive will be those that understand what's at stake – those that recognize that the competitive edge of the 2020s is not about having the most data but about moving, analyzing, securing, and leveraging it with precision.

In an era defined by AI, automation, and cloud-driven operations, businesses that fail to invest in high-performance network infrastructure risk falling behind. Whether integrating smart manufacturing, deploying real-time data analytics, or scaling enterprise AI, network connectivity is the invisible engine driving transformation today.

Discover how Verizon's end-to-end network solutions can help your business unlock the full potential of digital transformation. Click here to learn more.

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