The Trends Transforming On-the-Go Business

How to position your business for success in a connected, mobile, data-based world.

verizon connect

Digital transformation for today's businesses

Digital technology has been reshaping the business landscape for decades, creating new business models, improving productivity and revolutionizing the way companies do their work. Instant data streams from smartphones, tablets, GPS vehicle tracking systems and connected equipment provide managers and workers with information to make smarter business decisions. Intuitive software turns information into insights that can improve productivity, efficiency, security, customer service and worker safety – all of which can translate to increased profitability and growth.

Making digital transformation a reality

For many businesses – especially small and medium-sized businesses (SMBs) – the path can seem daunting. But what does digital transformation really mean for today's business?

Businesses must stay on top of these trends and adopt the right strategy, operational processes and value-added technology to achieve maximum benefits moving into the future.

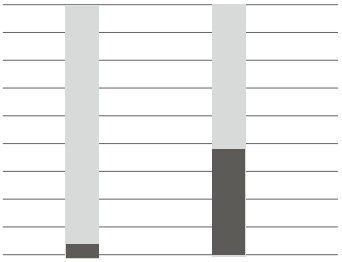
For this report, we spoke with the people at the cutting edge of developing and implementing these technologies. We will explain these technologies, show you where they are headed, and most importantly, show you how to make the right moves today to position your business for success.

Key technologies that are set to revolutionize the landscape include:

- Enhanced connectivity and 5G
- Electric and autonomous vehicles
- Shared economy model
- Internet of Things (IoT)

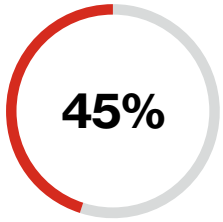
As we look to the future, businesses from local plumbers to global enterprises face the same decision: embrace the digital transformation or be left behind.

Worldwide digital transformation spending



2017 **$714 billion**

2019 **$1.7 trillion**



Generated revenue

Recent estimates state that these digital transformations amount to spending that will reach $1.7 trillion worldwide by the end of 2019 – a 42 percent increase from 2017 – and organizations will generate at least 45 percent of their revenue from these new business models.[1]

[1] https://www.idc.com/getdoc.jsp?containerId=prUS43188017

Navigating the hyperconnected vehicle of the future

We are approaching the day when virtually every vehicle and asset purchased by businesses large and small will be connected to the internet. By 2020, approximately one in five vehicles on the world's roads will have some form of wireless network connection.[2]

Vehicle connectivity relies on a mix of built-in and after-market technologies – and today, most commercial vehicles come equipped with a factory-fit embedded telematics platform.

For example, Ford has announced that by 2019, 100 percent of its U.S. vehicles will be built with connectivity, and by 2020, 90 percent of its new global vehicles will be connected.[3]

Vehicles that do not yet feature factory-installed telematics solutions are able to rely on after-market products such as Verizon Connect Fleet and Reveal. These after-market devices can be easily tied in to a network, such as Verizon's, to work seamlessly alongside built-in products, creating a stream of information that can be fed into a central data management system.

Access to comprehensive information can help businesses:

- Better serve their customers
- Improve efficiency and productivity
- Promote safer driving habits for workers and drivers
- Manage a reliable return on assets and vehicles

Businesses will employ nearly 37% of the 8.4 billion connected things in 2017, representing a hardware investment of $964 billion.[4]

This growth is being driven by:

- The continued reduction in the cost of connectivity
- Feature-rich cloud computing solutions
- The availability of inexpensive and reliable sensors

Fast fact:

Verizon Connect is a leader in built-in OEM solutions, including relationships with Ford, General Motors, Hino, Isuzu, Mack, Fuso Truck of America and Volvo Trucks.

[2]http://www.gartner.com/newsroom/id/2970017
[3]https://media.ford.com/content/fordmedia/fna/us/en/news/2017/10/fords-future-evolving-to-become-most-trusted-mobility-company.html
[4]https://www.gartner.com/newsroom/id/3598917

The role of telematics: Driving safety and assistance

Telematics technology has enabled location-based services to help improve the performance of fleets, including monitoring vehicle information, tracking driver performance and analyzing route information. Other advantages of telematics solutions include helping to control vehicle maintenance costs and facilitating greater employee and customer satisfaction. The connected vehicle is going to be a better-maintained vehicle – and a better-maintained vehicle is a safer one.

Additionally, driver-assistance technologies such as collision avoidance and lane departure alerts are being built in at the OEM level – and telematics technology enables businesses to gather that data to monitor driver performance and encourage safer driving behaviors. The right fleet management solution provides a unique opportunity to correct unsafe driving, which can help decrease the chances of being involved in a serious accident.

The future of connectivity and componentization

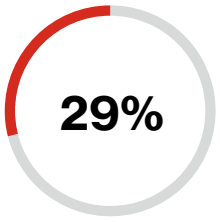
The next phase of vehicle connectivity will be focused on componentization, defined as connecting all assets and products down to the component level to enable better performance and safer operations. For example, engines and transmissions will soon be connected to the internet, allowing companies to have much more insight into how they are behaving, so they can be tuned in near real time. This will then allow for better fuel efficiency and performance based on the type of load that is being hauled or terrain on which the vehicle is being driven.

According to the U.S. Department of Transportation, there are three main benefits to connected vehicles. Connectivity is critical to enjoying these benefits:

- Improved safer driving behaviors can reduce and mitigate crashes
- Increased mobility and accessibility through traffic flow dynamics, mobility options and expanded infrastructure capacity
- A reduction in energy use and emissions

Fast fact:

The freight transportation and warehousing industry, which recorded the best overall safety scores, came in roughly 66% under the U.S.[5] baseline for speeding over 80 mph.[6]



The power of data:

Using more than 101 billion data points collected over the past decade, Fleetmatics (now a part of Verizon Connect) conducted an analysis of the driving behavior of the fleets of customers across the continental U.S. Eight weeks after implementing a fleet management solution, 29% of new customers experienced improvements in driving behavior.[4]

[5]Fleetmatics Fleetbeat Volume 3. 2016.
[6]https://www.its.dot.gov/presentations/2017/ACA.pdf

Telematics will be soon tied to smart city technology, such as vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I). This innovation is expected to bring a myriad of benefits to businesses. Using cellular communications to assess system performance in near real time, intelligent traffic management systems will reduce driver stops and adapt signals to smooth traffic flow, helping travelers and commuters spend less time traveling and businesses to be more efficient and productive.

Key takeaway

With the right connections, businesses can see enhanced efficiency, customer satisfaction and driving safety. While not everything is connected yet, by equally accommodating built-in and aftermarket technologies, Verizon Connect makes it simple to have the best possible connected vehicle strategy and provides a smart path to the connected future. For businesses, this connectivity leads to better maintained vehicles, more day-to-day efficiency and better driving safety conversations with drivers.

What 5G can do for a mobile business: Speed and connectivity

The opportunity now exists for businesses of all sizes to turn data into insights that can fuel improvements in their operations.

Susan Beardslee is a Senior Analyst at ABI Research, a market-foresight advisory firm providing strategic guidance on the most compelling transformative technologies. According to Beardslee, the ability to better understand and manage operations through vehicle, sensor and historical data that can be shared across OEMs, fleet operations and maintenance is a huge part of reducing downtime by identifying failures before they happen.

As vehicles add hardware and computing power to handle all of this data and make it actionable in the day-to-day, they need a transit mechanism to take that data out of the vehicle and communicate it with other vehicles and internal infrastructure. However, given the expected increase in volume of data, a faster, higher capacity network is needed.

That's where 5G steps up to the plate.

Taking connectivity to the next level

5G is expected to deliver mobile data speeds faster than today's 4G wireless technology. 5G is poised to fundamentally shift how American consumers and businesses connect to each other and to the world around them.

Recently, the FCC removed legacy barriers to infrastructure deployment, hastening the development and rollout of 5G technology.

A potential outcome of this move to 5G is the use of the vehicle as the centerpiece of a mobile work environment, enabling it to serve as a single point of contact for all types of connectivity. Integrating additional technologies like inventory control using RFID, Wi-Fi and online capture of data and quick information exchange would further solidify the vehicle as the workspace of the future.

Fast fact:

According to a recent IHS Markit report, 5G will enable $12.3 trillion of global economic output in 2035, and the global 5G value chain will generate $3.5 trillion in output and support 22 million jobs. [7]

"5G will have slices in the network, meaning you can slice a network where you give away a very low latency—maybe down to a couple of milliseconds where you actually can do transactions or maybe autonomous car because of the network—or you can do a slice with enormous throughput where basically you'll send a lot of data, but you don't need much latency. So, then you need to orchestrate and define the network very differently in order to make those slices."[8]

– Hans Vestberg, Executive Vice President and President of Global Networks and Chief Technology Officer, Verizon

[7]https://www.ihs.com/Info/0117/5g-technology-global-economy.html
[8]http://www.verizon.com/about/news/conversation-hans-vestberg

Empowering freight as a service

5G will also empower Freight as a Service (FaaS), helping to support on-demand capacity and service needs. With the use of a mobile resource management (MRM) platform, connected vehicles will be easily transferable to and from different organizations, and businesses will be better equipped to understand their demand and resource requirements.

ABI Research forecasts FaaS to represent 30 percent of total goods transportation revenues by 2030, with benefits including cost reductions, resource utilization improvements, and convergence of market landscapes through adoption of a sharing economy business model.[9] And this can have an immediate impact on underloaded freight assets, with an average global air cargo Freight Load Factor as low as 44 percent and a structural 20 percent long-haul truck cargo capacity utilization deficit in the U.S.[10]

Key takeaway

The shift to 5G is necessary to meet increasing connectivity requirements and will facilitate a number of changes in the small- to medium-sized business (SMB) landscape. The concept of the vehicle as a mobile work environment will enable companies to take advantage of one single point of contact for all types of connectivity, and FaaS will streamline freight and parcel delivery services through advancements in cargo marketplaces, on-demand transportation, freight brokerage and ridesharing.

We see about a 20% underutilization in the U.S. of cargo capacity – and these private and for-hire fleets can absorb that unexpected demand and can level seasonal fluctuations, and it helps really stimulate competition. In between different transportation modes, it can reduce costs and help improve margins.

– Susan Beardslee, Senior Analyst at ABI Research

Fast fact:

61% of logistics firms are adding wearable technologies, such as smart watches, as part of their technology innovation strategy.[9]

[9]https://www.ihs.com/Info/0117/5g-technology-global-economy.html
[10]https://www.abiresearch.com/press/abi-research-forecasts-global-freight-service-faas/

Understanding the business case for autonomy, electric vehicles and the sharing economy

In the coming years, 5G technology will be essential to the advancement of V2I and V2V connectivity. The next piece of the puzzle will be autonomous vehicles – estimated to produce up to 30 TB of data each day – that will rely heavily on the new networks, using processing power to determine where and how fast to drive.[11]

Both autonomous and electric vehicles are expected to enter a period of significant growth. Autonomous car registrations are forecasted to grow at a compound annual growth rate of 62 percent from 0.2 million units in 2020 to 24 million units in 2030.[12]

How autonomous and EV sharing will affect SMBs

Today's emerging share-centric landscape is poised to alter vehicle ownership economics forever. It will enable more consumers to go without owning a vehicle and allowing those who do to generate revenue from it. We should expect an impending democratization of revenue as technology enables more and more individual owners to participate in the vehicle market, and businesses of all sizes could see operational changes as a result.

And as electric and autonomous vehicles become more prevalent and vehicle sharing expands to help solve on-demand needs, MRM platforms will grow in importance as companies seek greater insight into their demand and resource requirements.

Utilizing a mobile resource platform provides businesses the information access they need to determine the miles vehicles travel in total and between stops, which can allow for a determination of optimal charging points for electric vehicles. This way, businesses can invest in installing charging points and determine which routes do or do not make sense for electric charging.

New research predicts **one in six cars sold globally** will be electric in 2025, and every third car sold in Europe will be electric. The positive trend in EV sales is particularly high in the fleet segment, where greater value is placed on total cost of ownership and companies must comply with CO^2 targets.[13]

New benefits abound with automation

As vehicles take on increasing levels of automation, from Level 1 (driver assistance, widely available today) to Level 5 (full automation, still well on the horizon), enhanced safety, productivity and efficiency will result. Even without a vehicle being fully autonomous, significant value can be achieved, including major fuel economy improvements and cost savings.

Fast fact:

There will be more than 11 million shared driverless vehicles operating on the roads globally by 2030, serving an average of 64 users per shared driverless vehicle.[14]

[11]http://news.ihsmarkit.com/press-release/country-industry-forecasting/big-data-drivers-seat-connected-car-technological-advance
[12]https://www.researchandmarkets.com/research/zpjn22/the_future_of [13]https://neo.ubs.com/shared/d2NY9OkeKUpBxTw/
[14]https://www.abiresearch.com/press/driverless-cars-and-shared-mobility-transform-trad/

Verizon Connect currently helps customers improve their routes so operators drive fewer miles and service more customers in a given shift, helping to improve both customer satisfaction and the bottom line. The software platform identifies opportunities to improve driver behavior, anticipates breakdowns and manages maintenance schedules to improve vehicle uptime. It also tracks drivers' Hours of Service (HOS) compliance electronically, enabling them to collect payment at the point a load is delivered or service is provided.

Businesses need an integrated, easy-to-use system or platform to manage these opportunities, and the more they do to push forward in the automated world, they more they can take advantage of changes and understand the way their vehicles are driven.

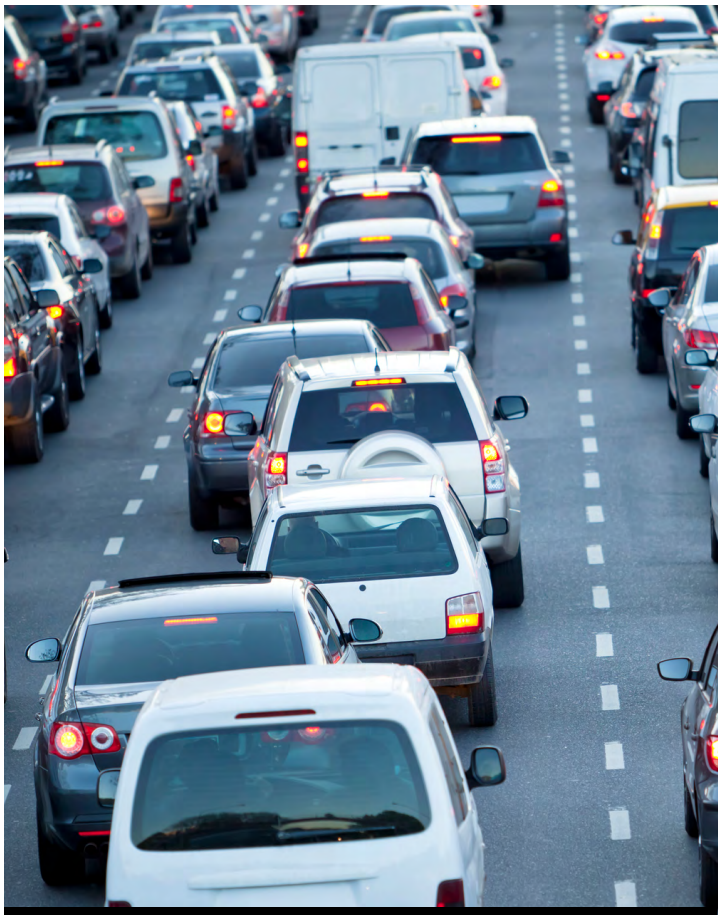
Key takeaway

As vehicles and sharing evolve, the technologies offered today, such as mobile resource and fleet management platforms, are the building blocks for future benefits. Those small businesses that take a proactive approach to adapting their business and striving toward enhanced levels of connectivity will be able to take greater advantage of the technologies of tomorrow.

The power of data

When autonomous vehicles eventually do reach the level of full automation, a mobile resource platform will remain a key part of business operations. An autonomous vehicle still needs to know the answers to the following questions every day:

- What crews?
- What work?
- What equipment?
- What truck?
- Where do they go?
- Did they get there?
- How did it happen?
- What do you do tomorrow?



Fast fact:

NHTSA states that 94% of serious crashes are due to dangerous choices or errors people make behind the wheel.[15]

[15]https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety

The next step: Moving from reactive to proactive with IoT

Today, we certainly see business value in connecting vehicles and devices and gathering data. But the Internet of Things (IoT) makes data actionable by adding context – where mobile vehicles and workers are located and what work is being performed in the field and when.

The industry has evolved to the point where any tool or asset can be inexpensively connected via IoT sensors and data can be captured, interpreted and acted upon. This provides businesses the opportunity to utilize predictive analytics through data evaluation and AI.

Forward-thinking companies that manage their demand more intelligently and have a thorough understanding of their mobile resources, while providing quality service, will likely have more power in this new industry dynamic.

The benefits of IoT: Enhanced productivity and customer service

The services industry in particular will benefit from IoT through the use of sensors to perform condition-based monitoring (CBM). An IoT sensor placed in an appliance, such as an air conditioner, will enable a service call to be initiated only when necessary, as opposed to today's regularly scheduled maintenance trips, which take much more time for service employees.

With IoT-enabled CBM, service companies can dramatically reduce their service costs, become more predictive and proactive, and deliver a higher level of service to customers. By constantly monitoring equipment via IoT, a fix can be initiated even before a customer is aware of an issue.

As CBM continues to expand, these connections will increasingly be fed into digital twins, a virtual model of a process, product or service that is used to detect issues, test and simulate scenarios on the physical model. This technology provides quick, accurate insights for what is happening inside machines, leading to minimized downtime and increased efficiency.

IoT is often incorrectly described as a category, but similar to the internet, IoT is not a "category."

When the internet first started to become widely-used, it comprised mostly of e-commerce. However, today there's not one aspect of any business's operations that is not tied to internet services.

To think about the internet as a category does not make sense in the context of a modern organization, and IoT will become this way in the future – pervasive to the point that it is an integral part of everyday operations.

Fast fact:

The number of connected IoT devices globally will increase 12% on average annually, from nearly 27 billion in 2017 to 125 billion in 2030.[16]

[16]https://technology.ihs.com/596542/number-of-connected-iot-devices-will-surge-to-125-billion-by-2030-ihs-markit-says

This predictability, made possible by capturing and interpreting massive amounts of data, could allow companies to begin productizing packaging hardware and service together, and leading to recurring sources of revenue beyond the initial sale. This represents a potential disruption for the service industry, necessitating the need to begin gathering large amounts of data now to gain greater insight and make necessary adjustments.

Setting up for success in the new service economy

Another disruption to the service industry brought on by telematics and IoT that must be accommodated is the "Uberization" of the service economy and the shift in expectations from what a service interface traditionally looks like.

Many people now expect to engage, reserve, book and pay for services in a seamless, usually non-human, efficient way. Success in this new service economy is dependent on a thorough digital transformation to have reliable insight into where their resources are, what demand currently looks like and how long it will take for jobs to be completed.

As high-quality services are provided, SMBs can use their capabilities and brand to be rewarded for the excellence they display. As customers rate their services, a more transparent marketplace results and providers can gain visibility for their businesses and compete on a much broader plane.

Like industrial cloud platforms, adoption of digital twins has yet to meet its growth potential. Manufacturers have to consider many moving pieces, from what to do at the edge vs. the cloud to simple ROI. They must try to take advantage of this opportunity to optimize asset performance without over-complicating simple operations.[17]

– Pierce Owen, Principal Analyst at ABI Research

Fast fact:

- Top small business service teams will increase the use of predictive analytics by a whopping 139% over the next year.
- 52% of small businesses will increase their budgets for productivity apps over the next two years.
- 65% of IT leaders at small businesses currently empower business users to solve problems using tech tools.[18]

Key takeaway

Businesses that use the data available to them in an actionable way open up a whole new world of possible success. The ability to proactively understand equipment to reduce cost and downtime is a huge priority for businesses large and small. As machines share information autonomously, actionable data results can help businesses transition away from traditional reactive operations and respond more quickly, becoming more productive and delivering a higher level of service to customers.

[17]https://www.abiresearch.com/press/54-condition-based-monitoring-systems-will-feed-di/
[18]https://secure2.sfdcstatic.com/assets/pdf/misc/benchmarks-small-business.pdf

Preparing for the future, while improving productivity and profitability today

Technology continues to break down geographic barriers, making it easier for businesses of all sizes to participate in the global marketplace. However, with a myriad of tools and partners available, it can be difficult to determine where best to make technology investments.

A shortsighted approach focused on achieving immediate needs with minimal investment can yield strong near-term results, but leave SMBs open to threats from competitors with more comprehensive digital transformation strategies. While needing to be fiscally responsible, SMBs are challenged to look beyond the lowest-cost solution approach and leverage the benefits its partners' investments in research and development (R&D), technology and innovation.

By aligning with a partner, such as Verizon Connect, that invests significantly in innovation and R&D and being a part of its data-rich, secure network, SMBs can reap the benefits of those investments to help them achieve their immediate business goals and support their long-term success plans.

At Verizon Connect, we're committed to helping our customers understand and implement best practices for on-the-go business with mobile workforces ranging from five vehicles to thousands. We're setting out to enable businesses of all types to take advantage of shared learning from the breadth of companies we serve to help accelerate growth and transform their businesses.

In the Americas, Berg Insight estimates **Verizon Connect to outnumber its closest competitors in the fleet telematics space by a factor of three** and has reported that the number of active fleet management systems deployed in commercial vehicle fleets in North America was 6.7 million in Q4-2016.

Growing at a compound annual growth rate (CAGR) of 15%, this number is expected to reach 13.5 million by 2021.[19]

[19]http://www.berginsight.com/ReportPDF/Summary/bi-fmseries2017-sum.pdf

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