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CONNECTED MOBILITY

A New Mobility Industry Emerges



We are experiencing an era of reinvention, of new possibilities. Technology is the force behind whether or not automotive organizations will disrupt or withdraw as they pursue the lucrative world of new mobility services and driverless cars. As leaders and technologists in this industry, you have a direct impact in reshaping the way your workforce contributes, designs, and builds for a connected future.

A look into the future of connected mobility in 2030

While the pace and scope of change is uncertain, industry experts agree the automotive and transportation industry will experience the following shifts through 2030.¹



Vehicles will continue to become more sentient.

Thanks to the data era, the relationship between humans and machines will strengthen and evolve across the entire transport ecosystem and industry.

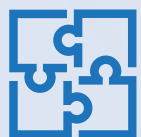


Safety will intersect with scale.

AI will play a critical role in improving safety as autonomous vehicles evolve and scale.



Vehicles will essentially become mobile computers, generating a massive amount of data and the need to process that information.



Connectivity and bandwidth will be critical

for fully autonomous, self-driving vehicles to realize their full potential.

Yet the question we're sure that remains on everyone's mind is: "What are the right decisions to make during these uncertain times?" Looking to the future, a path forward is becoming increasingly clear. These recommendations are a result of exclusive research, long - term partnerships and experience working on pioneering mobility projects with customers across the automotive and transport landscape.

Revenue streams are shifting in response to changing demands

Despite a future ripe with disruption, mobility CIOs and CTOs must act now to protect their organizations' futures and create a competitive advantage.

Within the next decade,

100%

of new cars will be connected, up from 25% today.¹

Revenue streams are shifting. Industry growth will come from new sources: new types of vehicles, components, software, sales, uses of data and the services that can be delivered to mobile platforms. While these emerging revenue streams only amount to about \$2 billion per year today, they are expected to grow to \$141 billion—a 7,500% increase—by 2035.²

All these changes are putting pressure on traditional suppliers, OEMs, and manufacturers to invest into new routes to profitability, but this also has a cascading impact on the entire transport value chain.

As traditional profit pools shrink, revenue from new options will grow exponentially. Eventually, there will be two main streams of revenue: "upstream," which will be the traditional model of selling vehicles, and "downstream," a lucrative market with huge potential, focused on delivering new connected transport, autonomous vehicles and mobility services. In fact, research shows that within the next decade, 100% of new cars will be connected, up from 25% today. By 2030, 50% of a vehicle's value will come from electronics and software.¹



Traditional products



Mobility services

To effectively monetize the downstream revenues, industry leaders will need to ask themselves one important question.



Do we deliver a service or a product?

The disruption happening right now is a reaction to one powerful (and highly defended) prediction: that the world is moving toward autonomous transport.

In fact, in our study of over 4,600 business leaders, 50% believe that self-driving cars will happen by 2030.¹ And so the chain reaction begins: new technologies are being created and harnessed, manufacturing partnerships are coming into the fold, and processes are undergoing transformation as industries converge. Driverless cars and autonomous driving are providing exciting opportunities for growth and business diversification. This is the data era and opportunity lies in unlocking and creating value from the untapped sources.

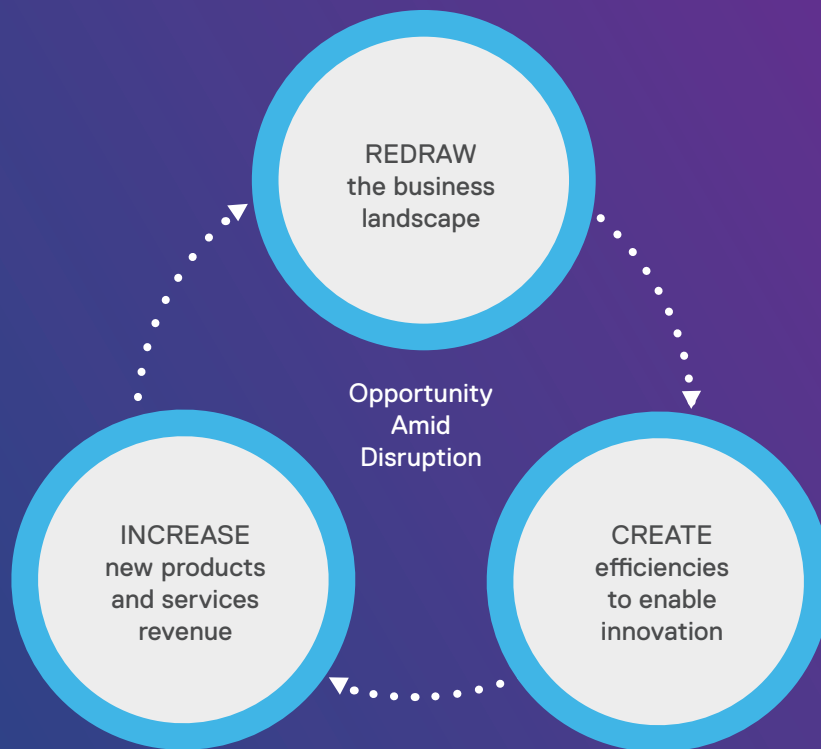
However, businesses will have to ask themselves, and ask quickly, “Do we deliver a product? Or do we deliver a service?” Because the opportunity is now for mobility organizations to deliver both.

The answer requires a more holistic lens. After all, this isn’t about preparing for a new business model, it’s about preparing for an entirely new industry. Through our analysis and research, the answer lies in creating a strategic mobility foundation—one that can leverage the value of ADAS data for AI training sets and projects while driving agility and efficiencies across the business.

In the next sections, we’ll discuss the business, technology and data challenges mobility leaders face. We shall uncover strategies mobility leaders need in order to meet the demands of the digital while the business landscape continues to be redrawn.

50%

of business leaders believe that self-driving cars will happen by 2030.¹



Digital challenges for mobility leaders

To address the key changes that are coming and find a competitive differentiator, mobility CIOs, CTOs and engineering visionaries must first face—and find solutions to—six critical technical challenges:²

- 1 **Rapid innovation:** Mobility leaders need to be able to create new business models, app ecosystems and platforms—assembling teams with the skills required to run them.
- 2 **Zettabytes of data:** Because of the scale of data now available, organizations need new solutions for data management, deep learning and analytics.
- 3 **Lagging network speeds:** Current networks cannot deliver the speed for the enormous data transfers the future will require. 5G networks will help significantly, but technology leaders will need to enable real-time, always-on connectivity for new mobility business.
- 4 **New management models:** Solutions will be needed especially for high-performance workloads, data, vehicular control, automation, learning, in-car compute/computer vision and vehicle-to-X communications.
- 5 **Data privacy, security, risk and compliance:** Connected vehicles will present a valuable target for cybercriminals. Perimeter security will not be sufficient.
- 6 **External data insights:** CIOs and CTOs will need to create solutions and standards for sharing and using data from maps, apps, traffic, urban data and maintenance.

While these challenges still need to be solved, a better understanding of them sets out a foundation. From here, the leadership team can work and explore options to address these issues.



Balancing innovation with business agility

Working to address data and digital transformation while creating a long-term mobility strategy does not happen overnight. Yet mobility leaders are prioritizing use cases like the below to take advantage of technologies like Edge computing, AI and 5G.

- ◆ **Artificial intelligence (AI) ADAS/AD training/testing for driver assistance systems**
- ◆ **Mobility-as-a-Service platform**
- ◆ **Smart production & operations**
- ◆ **Vehicle cybersecurity**

The Elements of a Competitive Advantage



75% see AI/ML applicable for their organization's customers while 83% see applicability for internal operations.⁴

By 2030, Mobility-as-a-Service will account for 30% of auto industry profit.¹



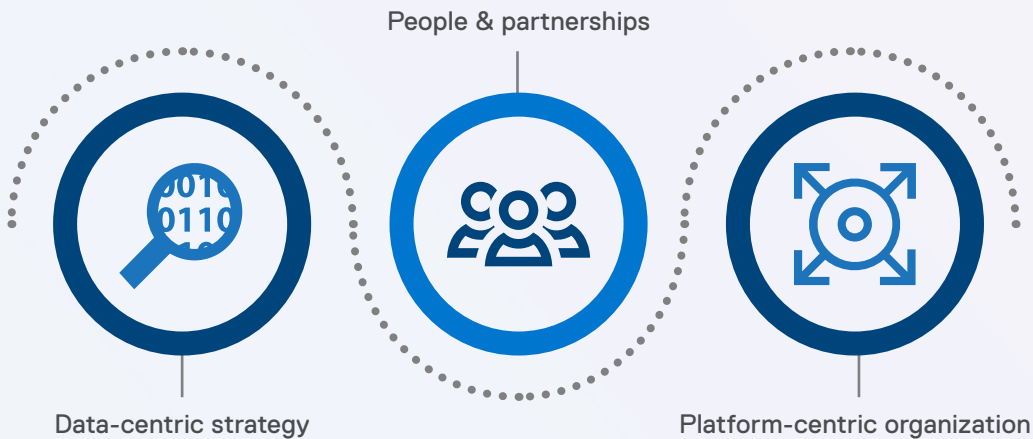
By 2030, smart factories and operations could add \$160 billion in productivity gains.¹

The average cost per data breach in the US is \$7.35 million.⁵



Foundations of a connected mobility strategy

According to research conducted by the Dell Technologies Chief Technology Office and analysts Frost & Sullivan,² both the solution to an organization's challenges and the opportunity to differentiate themselves will be found in leveraging the enormous volume and variety of data that will be generated throughout the lifecycle of each vehicle.



McLaren successfully moved to an infrastructure-as-code approach to support its expanding hybrid cloud operating model.³

Upgrades to create a digital workplace through 2030 of key applications now occur in

2 days

instead of 2 weeks

To fully prepare their organizations, leadership should work toward these initiatives:

Adopt a data-centric strategy: Creating a strategic data plan will help you navigate your organization into the future. Use the following advice as a starting point:

- Create value from data by managing and monetizing the huge, real-time data streams that drive your AI strategy

Create a platform-solutions approach: A platform-centric mindset creates unity and value through standardization and automation. On the journey to becoming more platform-centric, consider this guidance when making technology investments:

- Focus on a multi-cloud and data ingest strategy for agility, cost savings, and new revenue

Create your workforce of the future, now: Attracting and retaining talent with functional expertise to make connected mobility a reality is critical. Investing in human capacity and competences while establishing partnerships with the technology industry are key to overcoming the challenges of making autonomous vehicles a reality to create a digital workplace through 2030.

Innovate with security in mind

In addition to the above tenets for connected mobility, an intrinsic cybersecurity strategy for data privacy, protection risk and compliance is essential.

Digital transport, vehicles and operations ecosystems are constantly exposed to security risks just as are other connected devices. With data now considered the new gold, all this information represents a valuable target for cybercriminals. The digital pillars of mobility that we talk about—agile platform development, artificial intelligence and cloud-native applications—need to be interwoven with an inherent and integrated security culture and strategy.

Face disruption with a trusted leader

The technology roadmap to the future of mobility is still fluid as companies forge their paths to an increasingly digital future while providing differentiation in the market. But disruption is happening now. The decisions a CIO makes today will set the foundation for the future and impact tomorrow's bottom line.

Executives in today's transportation industry—suppliers, production, automakers and mobility providers—are keenly aware of the partnership and collaborations required to outrun the current pace of change. No organization can do it alone. One of the keys to a successful mobility strategy lies in working with not just any partner, but the right partner who can handle the complexities of data-centric infrastructure and processes. Organizations need someone with a long tradition in cutting-edge technologies and data management, one that has an eye on the future and is ready for a connected world. Dell Technologies has the end-to-end capabilities to address the connectedness of things while also making a driverless world a reality.

Dell Technologies is instrumental in changing the digital landscape the world over, fuelled by the desire to drive human progress through technology.

Continue learning about your mobility strategy and the people, processes and technologies that will get you there:



[Devising a Mobility Strategy](#)

[Seizing the Mobility Opportunity:
Partnering for Success](#)



READ
the results of the Dell
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Transformation Index Study



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Sources:

1. Institute for the Future, "Future of Connected Living: Augmented Humans in a Networked World," http://www.iftf.org/fileadmin/user_upload/downloads/ourwork/FY20_FutureofLiving_082019__1_.pdf
2. Frost & Sullivan, 2019, "Intelligent Connected Mobility is Reaching an Inflection Point — A Data-centric Future Requires a Platform Approach," https://www.dellemc.com/resources/en-us/asset/white-papers/solutions/intelligent_connected_mobility_white_paper_frost_sullivan_and_dell_technologies.pdf
3. Dell Technologies Luminaries: Episode 16: Better Data, Higher Speed for McLaren, <https://www.delltechnologies.com/en-us/perspectives/>
4. Emerging Technology Momentum and the Impact on IT Infrastructure, Enterprise Strategy Group, 2019
5. Secureworks, "2018 Cost of Data Breach vs. Cybersecurity Response Plans and Solutions," <https://www.secureworks.com/blog/data-breach-response-planning-cyber-threat-intelligence>