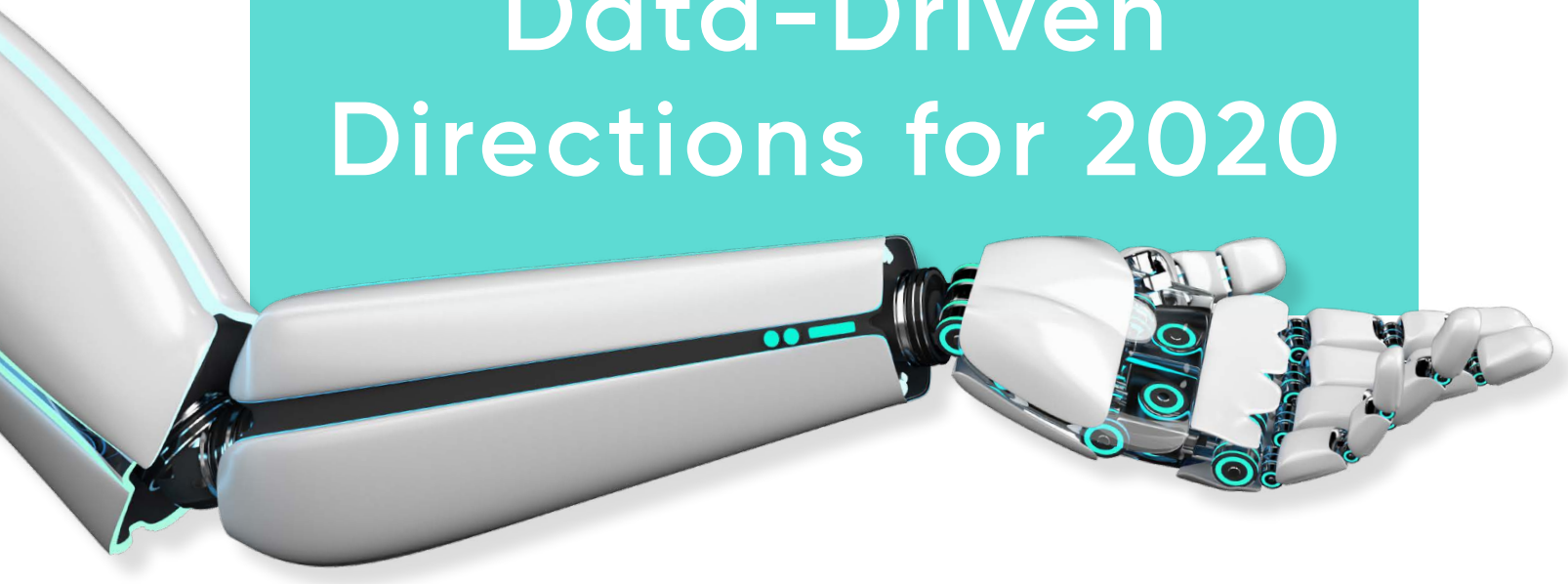
The Year of IoT and Machine Learning:

Data-Driven Directions for 2020



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Within the next four years, digital transformation spending is expected to surpass $6 trillion.

Consider 2019 a springboard, a year in which enterprises globally were projected to spend more than $1 trillion on digital transformation initiatives*. The biggest spenders? Industries for process manufacturing and discrete manufacturing, with transportation close behind.

Along with other industries on the digital transformation path, their investments are fueling the growth of machine learning (ML) and the Internet of Things (IoT)—which make operations more efficient and accurate and customer experiences more positive.

Yet in navigating this path going forward, industries and enterprises alike will find a growing number of data-driven directions in front of them.

As we see it, in 2020, nine directions in particular will have the strongest impacts.

* Worldwide Semiannual Digital Transformation Spending Guide, IDC

nine directions

1. Big data grows to ginormous data

2. IoT and ML are no longer future technologies

3. Data as a Service (DaaS)

4. The decline of packaged apps and the rise of progressive web apps (PWAs)

5. Prescriptive analytics will transform business intelligence

6. AI will create more jobs than it eliminates

7. Machine learning will increasingly augment human work

8. Robotic process automation (RPA) will continue to lead the automation movement

9. Autonomous vehicle training will become more cultural

one

Big data grows to ginormous data

Try to imagine the global datasphere—digital data created, captured, replicated and consumed—growing from 40 zettabytes of data in 2019 to a projected 175 zettabytes in 2025*. Put in perspective, one zettabyte is equal to 1 trillion gigabytes.

IoT-generated data and real-time data will be only a fraction of the onslaught. Of the 175 zettabytes of data anticipated by 2025, nearly 60% of it will be created and managed by enterprises versus consumers. Put in perspective again, the volume of data created and managed by enterprises in 2015 was just 30%.

Driving this burst of data are more IoT edge devices sending waves of information to the cloud. The trend will accelerate in 2020, when ginormous data will start to make big data look small.

* IDC Data Age 2025

two

IoT and ML are no longer future technologies

Instead, call IoT and ML "necessary" technologies. At this point of the digital transformation, the workforce is just not equipped to analyze large amounts of data. Enterprises will therefore continue looking for ways in 2020 to perform data analytics using ML and augmentation to complement human work.

As a consequence of ginormous data, enterprises and industries in every sector should also grasp IoT as the backbone of today's data-driven economy. To make sense of data in smarter ways, the evolution of IoT products and services will focus less on core technologies and more on intelligent ones, such as ML.

Yes, IoT and ML have arrived. But their continuing evolution, and adoption, will be key to helping enterprises and industries make better use of data in much larger volumes.

three

Data as a Service (DaaS)

In 2020, every person in the world will create 1.7MB of data per second*. With all of this data readily available, it only makes sense to use it to make more knowledgeable business decisions.

A good example: KAR Global is an automotive auction services company serving auto dealers worldwide, and they've released a platform that gives dealers a wide-angle view of cars and current market activity. Cars in most demand, the best ROIs, how dealers can move vehicles that are less desirable to buyers, and even inventory segmentation analyses and recommendations for remarketing.

The platform uses data available from KAR and its customers in a proprietary way. But in offering this data as a service to other companies, it benefits the auto sales industry as a whole. For decision-making, expect other industries to begin using the DaaS model similarly.

* Data Never Sleeps 6.0, DOMO

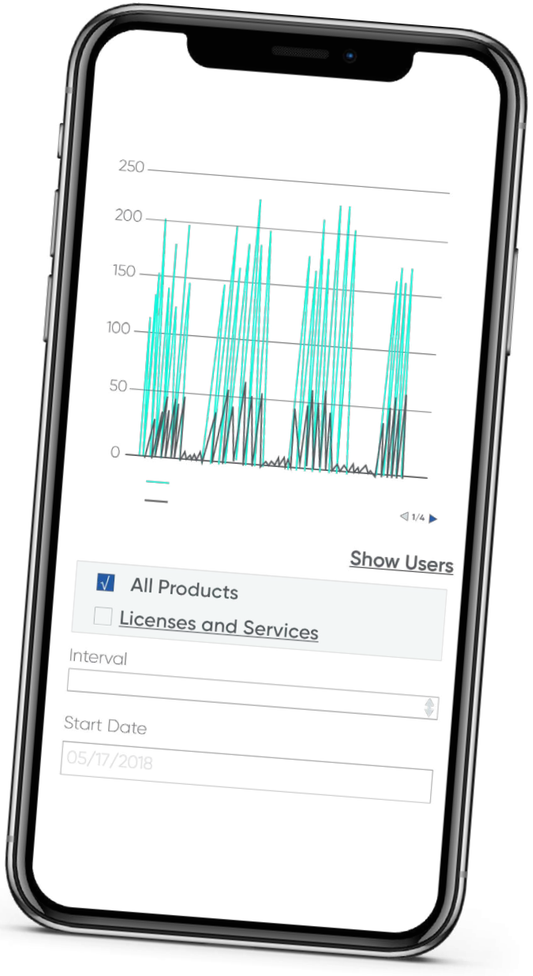
four

The decline of packaged apps & the rise of progressive web apps (PWAs)

Downloading apps will soon be a thing of the past as progressive web apps become more commonplace. PWAs are accessed in the same fashion as apps downloaded from app stores. However, a PWA loads faster, is more secure, and is much smaller in size.

In industries such as motorsports, medical manufacturing, construction, and financial services, companies like Lumavate are already helping developers move from native applications to cost-effective PWAs. Expect other industries to join the movement in 2020.

And as the user masses discover a better experience with PWAs and freed-up space on their devices, add "more popular" to the PWA equation.



five

Prescriptive analytics will transform business intelligence

Unlike predictive analytics, prescriptive analytics goes beyond forecasting possible options and instead suggests a range of actions and the potential outcomes of those actions. Autonomous vehicles are prime examples.

A self-driving car must continually make forward-thinking calculations based on analyzed data. Data tells the car to decide when to turn, change lanes, slow down, and even when to make sudden maneuvers to avoid a crash. Call it prescriptive analytics at its best.

For business intelligence, prescriptive analytics work in unison with predictive analytics to give business leaders foresight as well as insight. Oil and gas industries, for instance, use the model to assess supply, demand, pricing, and industry and market changes. With more tools available in 2020, look for data analyzation via prescriptive analytics to become a holy grail.

six

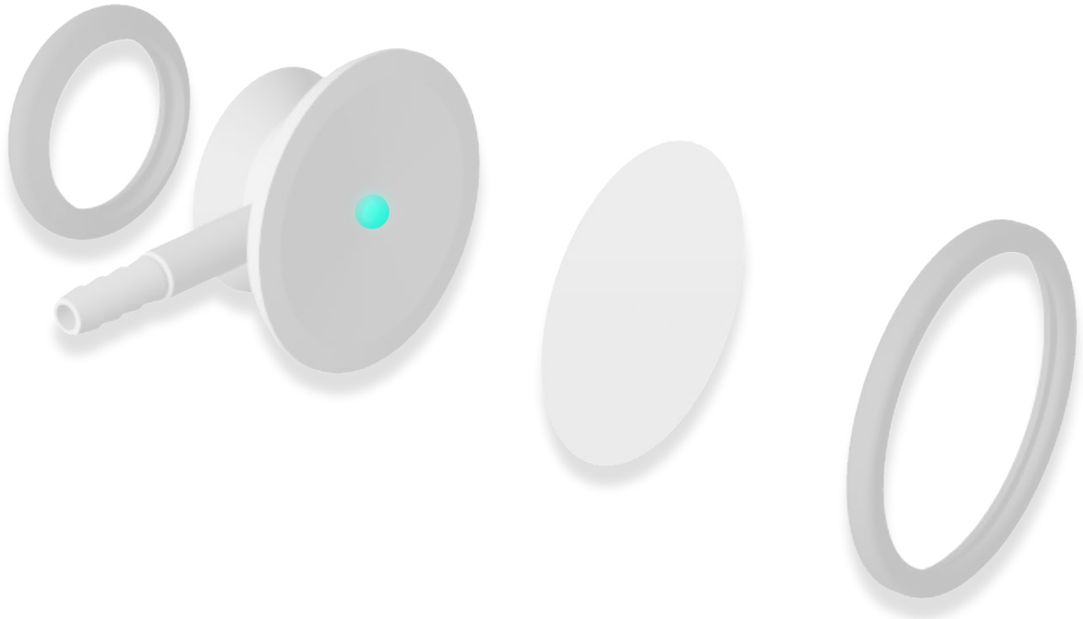
AI will create more jobs than it eliminates

It's true that AI is expected to eliminate 1.8 million jobs in 2020. Less publicized, however, is that the technology will also create 2.3 million new jobs during the same period, and 2 million net-new jobs by 2025*.

Education, healthcare, and the public sector are the frontrunners for these jobs, as is energy and particularly solar-powered energy. Jobs being lost are mostly middle and low-level positions that require little training, and that could be done by almost anyone.

To fill the upcoming positions in AI, enterprises will need to train or retrain employees in AI and IoT technologies. Industrial manufacturing is just one industry now reskilling its workforce, marrying the technical and non-technical knowhow of employees for the digital transformation. Other industries must take the same approach, and 2020 will be the time to start.

* "Predicts 2018: AI and the Future of Work", Gartner



seven

Machine learning will increasingly augment human work

Early on, the purpose of machine learning was regarded to be to automate tasks and replace human work. The focus now is on ML's ability to augment human work to make work processes more efficient and employees more productive.

In 2020, machine learning models will be engineered to optimize logistics, retail, robotics, even space. Industries will continue to discover other uses for these kinds of ML models as well.

At the same time, things like recommendation engines, fraud detection and robotic process automation will become standard and make industry competition fierce. Industries that use such solutions, ML, and augmentation to their fullest will be the frontrunners.

eight

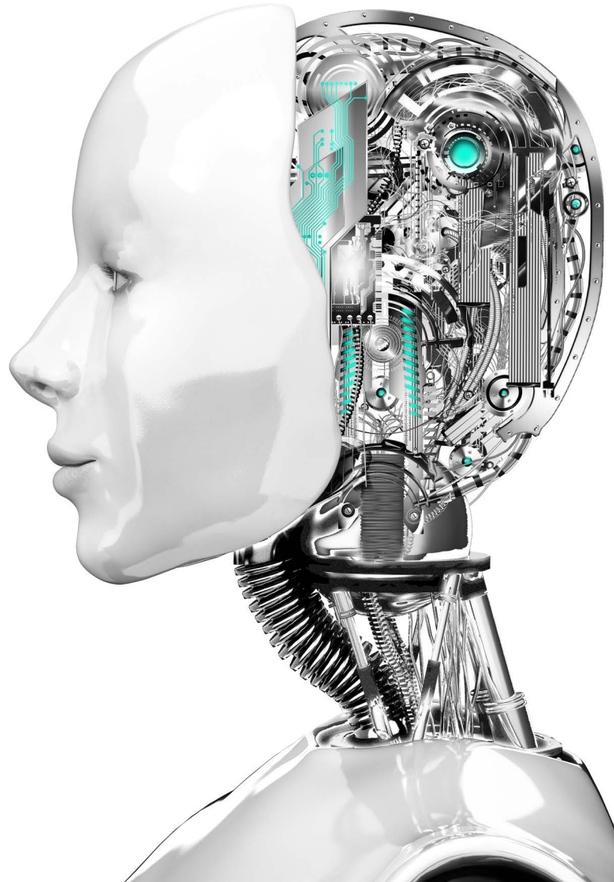
Robotic process automation (RPA) will continue to lead the automation movement

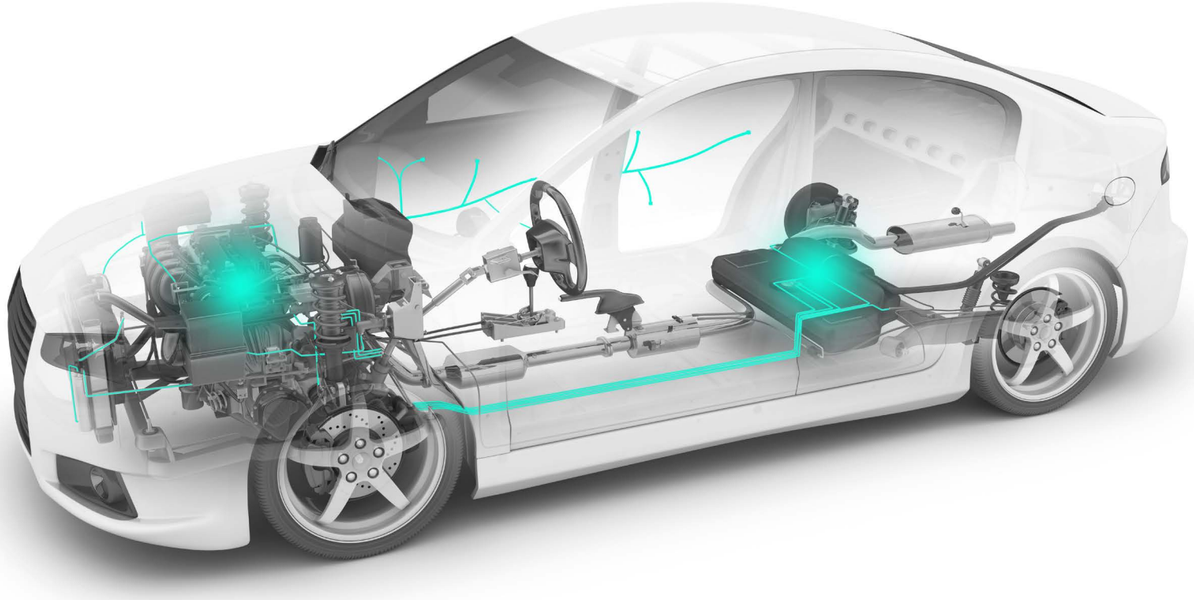
2019 saw enterprises double their use of intelligent automation tools like RPA for non-complex business tasks such as inventory management*. The manufacturing industry in particular—which is already using RPA successfully for things like order fulfillment and customer support—will increase its adoption in 2020.

The next step for RPA will be making it more intelligent. Potentially combined with AI, RPA applications will go from simply collecting and processing data to analyzing it and making contextual decisions. As RPA becomes more innovative, its adoption will become more widespread in industries of all kinds.

RPA will also provide an enterprise-wide strategy for intelligent automation as executives recognize its ability to generate ROI via reduced operational costs, increased revenues, and greater workforce capacity and involvement. In fact, executives who have implemented RPA thus far note that employees are more engaged by way of strategic and creative thinking.

"Automation with intelligence: Reimagining the organization in the 'Age of With'", Deloitte





Autonomous vehicle training will become more cultural

Although self-driving vehicles are already showing their intelligence, they're still learning unwritten rules of the road and other idiosyncrasies such as "Turn right on red." Multiplied by every state, province, country and territory that has roads and drivers, these rules and idiosyncrasies are endless.

For designers and engineers, deeper levels of understanding for various driving cultures will help them increase compatibility between human drivers and autonomous vehicles. Throughout 2020 and beyond, expect more testing facilities globally to train these vehicles for every driver scenario imaginable.

After all, the goal for safe—and law-abiding—autonomous vehicles is to make them think like a human.

Most of what we'll see in technology in 2020 will center on IoT products and services that enable enterprises to comprehend data acquired by the second. Building and analyzing this data now delivers more information than ever before, and in 2020, enterprises will use data in greater volumes to improve decision-making, operations, efficiency, and customer, employee and stakeholder experiences.

In the Year of IoT and Machine Learning, and no matter the industry, investments in IoT, ML and data analytics will be the key to staying competitive.

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