

# 2020 TECH TREND REPORT

---

A Platform for Business  
Transformation

EXECUTIVE BRIEF

Info-Tech Research Group, Inc. is a global leader in providing IT research and advice. Info-Tech's products and services combine actionable insight and relevant advice with ready-to-use tools and templates that cover the full spectrum of IT concerns.  
© 1997-2020 Info-Tech Research Group Inc.

# AN AI-DRIVEN ECOSYSTEM IS EMERGING

## In 2020, AI is going to accelerate technological change

Over the past decade, the number of scientific papers published on AI have outpaced papers published on computer science. In 2017, the number of AI papers had multiplied 7x since 1996, while computer science papers increased just 5x during that time, according to the [AI Index](#). The interest from researchers shows how important AI is going to be relative to other computer technologies in the years ahead.

AI is also seeing greater interest from new undergraduate students enrolling in introductory courses and conference attendees seeking agendas dedicated to AI. The AI renaissance is also impacting the commercial space. The number of US-based startups developing AI systems or using AI as an integral part of the business increased 113% from 2015 to 2018, backed by a 350% increase in venture capital funding (AI Index). Job openings requiring AI skills are soaring, as are the number of AI patents being filed worldwide.

As AI-driven processes become more sophisticated and are specialized to solve more industry problems, there's no telling how much AI could influence existing business processes. **Everything is on the table for automation or augmentation.**





# THERE IS NO LONGER SUCH THING AS “TOO BIG TO DISRUPT”

It used to be that the world's most valuable organizations enjoyed stability. No longer. During the past ten years of rapid new technology adoption, traditional businesses delivering products to market have been disrupted by digital-first firms using platform strategies to deliver services. Microsoft is the one firm out of the top five that endured, thanks to a complete reinvention of its strategy. Looking at the new top five firms by market capitalization, the common characteristic they share is the platform approach.

## Top Five Firms by Market Cap

### 2009

1. PetroChina
2. Exxon Mobil
3. Microsoft
4. ICBC
5. Wal-Mart

### 2019

1. Microsoft
2. Amazon
3. Apple
4. Alphabet (Google)
5. Facebook

# AS TECHNOLOGY EVOLVES, SO MUST STRATEGY

## Platform business models provide a constant threat and opportunity

Networks of contributors that are orchestrated rather than managed are coming together in new ways that remove or greatly reduce the influence of a third-party arbitrator.

Platform strategies find appeal as a path to resilience by both traditional industries and new. In 2019, the typical European auto maker draws on more than 30 partners to make cars that are connected, electric, and semi-autonomous. In China, Alibaba's Ant Financial Services (formerly Alipay) is the world's most valuable FinTech firm with 520 million users ([BCG](#)).

The creation of data, particularly around citizen interactions in the public realm, will be the source of new opportunities for governments and private-sector parties alike to relate to citizens. New questions about data ownership have arisen.

Often, governments will form private-sector partnerships that require a separate platform with an agreed-upon governance model to ensure equity in data sharing as well as the benefits realized from innovation.

Newer platforms are emerging where the founder of the platform builds in their own obsolescence, allowing the platform to self-govern after it gains enough network strength.

Leading into 2020, organizations who are considering platform strategies or contending against them must learn understand that under certain conditions a platform may achieve market dominance. Dominance, or "tipping" will occur when the network effects (the degree to which platform users benefit when there are more users present) and the multihoming costs (the difficulty in switching platforms) are high. This dynamic will have a major effect on business strategy in 2020.

### Sharing Economy Growth

2014:  2025 (Expected):  
\$14 billion \$335 billion

([Brookings](#))

### Hyperscale Cloud Platforms

AWS	Microsoft	Google
41%	75%	83%

(Revenue increase Q1 2018 to Q1 2019 per [Canalys](#))



# THE ROLE OF TECHNOLOGY LEADERS IS CHANGING

## Shifting the focus to business transformation and stakeholder value

The tech disruption isn't limited to one or two industries. It's going to affect the operations of every organization. It's no wonder that more than half of Info-Tech members believe that change is going to result in a shift in their responsibilities to focus on business transformation.

Yet IT leaders still lag their business counterparts when ranking the importance of innovation. Business stakeholders consider innovation three times more important compared to those in IT.

While IT expects to be tasked with business transformation, they are not valuing innovation highly enough to keep pace with the disruption that's ahead.

---

>50%

of IT leaders expect to focus more on **business transformation** in the next three years.

3X

Business leaders consider **innovation** three times more important than IT leaders do.

#1

The top business goal business leaders want IT to support is the delivery of **stakeholder value**.

# BUILDING ON “LEADERSHIP-IN-THE-LOOP”

## Delivering stakeholder value by focusing on the human benefits of technology

To achieve the delivery of stakeholder value, these trends highlight how **IT leaders must evolve** from over-automation solely for the purposes of scale and efficiency. Business benefits are still important, but they are no longer enough, and an over-focus on them will lead to unintended consequences.

### Business



#### Intelligence

The ability of the technology to leverage process outputs to improve decision making.



#### Scale

The ability of the technology to quickly increase capacity.



#### Efficiency

The ability of the technology to use fewer resources to accomplish the same amount of output or more.

Innovators are moving **beyond those outcomes** and considering ways to augment their people to create resilience. They're moving along the spectrum from a business-centric view to a human-centric view.

### Human



#### Trust

The extent to which the technology improves trust between parties.



#### Experience

The extent to which the technology improves user experience by making it easier, simpler, faster, or more fun.



#### Resilience

The extent to which the technology speeds recovery when a negative event occurs or prevents it altogether.

For 2020, we are introducing the trends that will define a new platform for business transformation. Understanding them will put you on the path to **delivering stakeholder value through technological innovation.**

## FOUR TRENDS WILL TRANSFORM ORGANIZATIONS IN 2020



AUTONOMOUS  
EDGE

**TREND ONE:** From the competitive cloud to the **autonomous edge**, many organizations have shifted some operations to the cloud to gain a competitive advantage. Now innovators are also reaching out to compute at the edge.



SYMBIOTIC  
ROBOTS

**TREND TWO:** From robotic automation to **symbiotic robots**, despite advances in AI, robots are still not ready to navigate unpredictable environments. Working in symbiosis with people is the answer.



DISTRIBUTED  
TRUST

**TREND THREE:** If deep learning, then **distributed trust**. The inherent bias in machine learning algorithms and the need to fairly reward creators has pushed innovators towards a more rigorous method of validation.



DATA  
EQUITY

**TREND FOUR:** If digital ethics, then **data equity**. The common thread of ethical issues relating to technology come back to consent and personal information, and many see the solution as empowering individuals to own their data.



# A PLATFORM FOR THE FUTURE

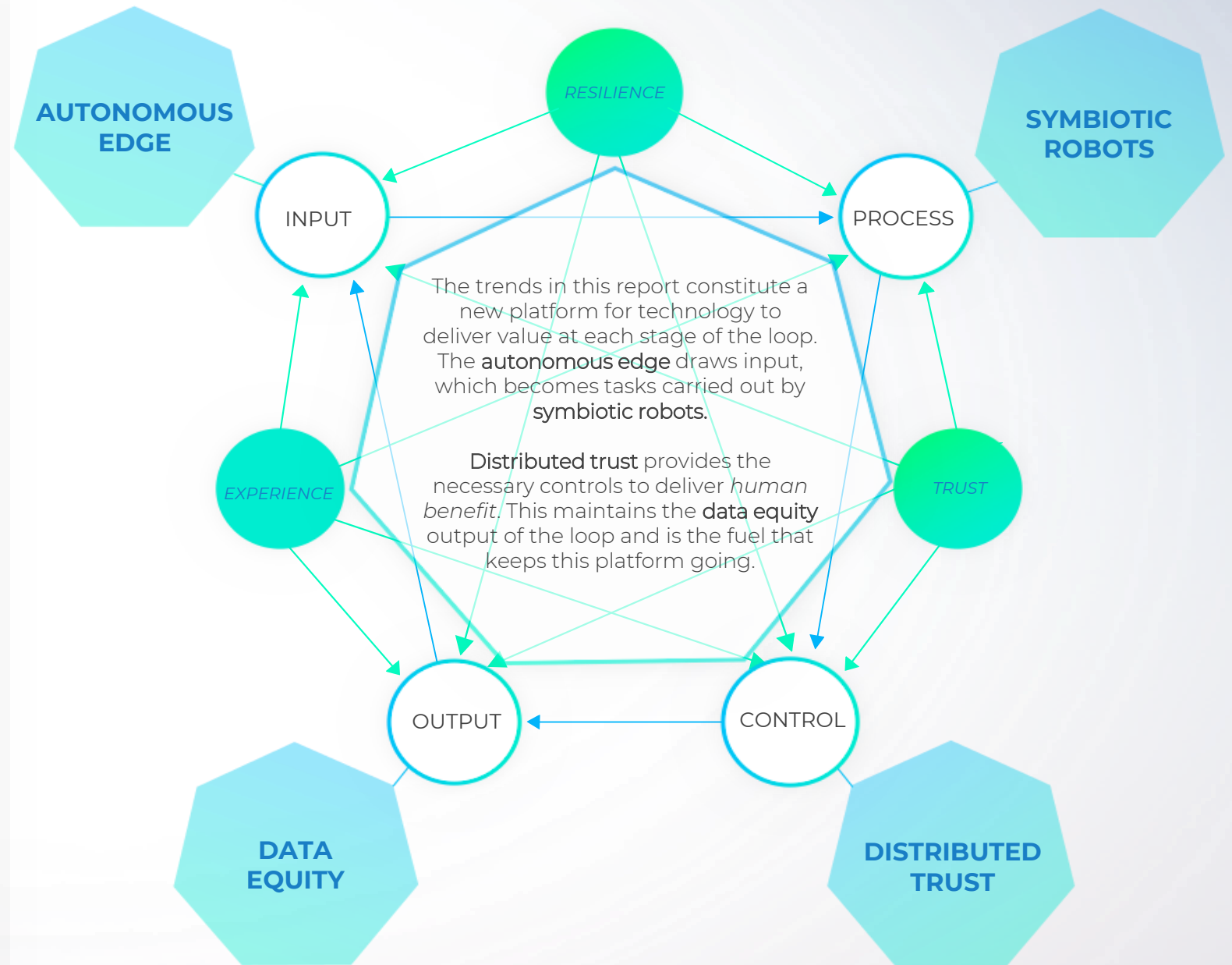
In 2019, we introduced the concept of “leadership in the loop.” The loop itself is a continuous process whereby technology generates an output, consisting of four phases:

*Input:* The materials, commands, and data that are required for a product.

*Process:* The steps taken to study, synthesize, break down, and reconstruct the inputs into the finished product.

*Control:* Assurance that the right materials and information is transferred to the right stakeholders at the right time to complete the product.

*Output:* The result of the previous three steps presented in an actionable way to a stakeholder.





# BIBLIOGRAPHY

## Extended Bibliography

"2019 Edelman Trust Barometer Global Report." *Edelman*, Feb. 2019. Web.

[https://www.edelman.com/sites/g/files/aatuss191/files/2019-02/2019\\_Edelman\\_Trust\\_Barometer\\_Global\\_Report.pdf](https://www.edelman.com/sites/g/files/aatuss191/files/2019-02/2019_Edelman_Trust_Barometer_Global_Report.pdf)

"Applying behavioral economics to maximize customer growth." *Gallup Knowledge*.

Web. <https://www.gallup.de/182714/behavioral-economics.aspx>

Biamonte, Jacob, et al. "Quantum Machine Learning." *arXiv.org*, 10 May 2018. Web.

<https://arxiv.org/pdf/1611.09347.pdf>

BOHR. "Publicly available research done by BOHR.TECHNOLOGY." *Github*, Aug.

2019. Web. [https://github.com/BOHRTECHNOLOGY/public\\_research](https://github.com/BOHRTECHNOLOGY/public_research)

"Canalys: battle for enterprise cloud customers intensifies as spending grows 42% in Q1 2019." *Canalys*, 30 Apr. 2019. Web.

<https://www.canalys.com/newsroom/canalys-battle-for-enterprise-cloud-customers-intensifies-as-spending-grows-42-in-q1-2019>

Caseau, Yves, and Serge Soudoplatoff. "The Blockchain, or Distributed Trust."

Fondation Pour L'innovation Politique. EU Agenda, June 2016. Web.

<https://euagenda.eu/publications/the-blockchain-or-distributed-trust>

"Cloud Computing Trends: 2019 State of the Cloud Survey." *Flexera Blog*, 27 Feb.

2019. <https://www.flexera.com/blog/cloud/2019/02/cloud-computing-trends-2019-state-of-the-cloud-survey/>

Dastin, Jeffrey. "Amazon scraps secret AI recruiting tool that showed bias against women." *Reuters*, 9 Oct. 2018. Web. <https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G>

Day, Matt. "Amazon Is Working on a Device That Can Read Human Emotions." *Bloomberg Technology*, 23 May 2019. Web.

<https://www.bloomberg.com/news/articles/2019-05-23/amazon-is-working-on-a-wearable-device-that-reads-human-emotions>

Dignan, Larry. "Top cloud providers 2019: AWS, Microsoft Azure, Google Cloud; IBM makes hybrid move; Salesforce dominates SaaS." *ZDNet*, 15 Aug. 2019. Web.

<https://www.zdnet.com/article/top-cloud-providers-2019-aws-microsoft-azure-google-cloud-ibm-makes-hybrid-move-salesforce-dominates-saas/>

Harwell, Drew. "Doorbell-camera firm Ring has partnered with 400 police forces, extending surveillance concerns." *Washington Post*, 28 Aug. 2019. Web.

<https://www.washingtonpost.com/technology/2019/08/28/doorbell-camera-firm-ring-has-partnered-with-police-forces-extending-surveillance-reach/>

Liu, Shan hong. "Spending on Internet of Things worldwide by vertical in 2015 and 2020." *Statista*, 7 June 2018. <https://www.statista.com/statistics/666864/iot-spending-by-vertical-worldwide/>

McFarland, Matt. "I spent 53 minutes in Amazon Go and saw the future of retail." *CNN Business*, 3 Oct. 2018. Web. <https://www.cnn.com/2018/10/03/tech/amazon-go/index.html>

# BIBLIOGRAPHY

## Extended Bibliography

MIT CSAIL. "Controlling robots with brainwaves and hand gestures," *EurekaAlert!*, 20 June 2018. Web. [https://www.eurekaalert.org/pub\\_releases/2018-06/miot-crw061818.php](https://www.eurekaalert.org/pub_releases/2018-06/miot-crw061818.php)

Nordholt, Jane Elizabeth, et al. "Secure multi-party communication with quantum key distribution managed by trusted authority." *Google Patents*, 9 July 2013. Web. <https://patents.google.com/patent/US8483394B2/en>

Ringel, Michael, Florian Grassl, Ramon Baeza, and Justin Manly. "How Collaborative Platforms and Ecosystems Are Changing Innovation." *The Most Innovative Companies 2019: The Rise of AI, Platforms, and Ecosystems*. BCG, 21 Mar. 2019. Web. <https://www.bcg.com/en-ca/publications/2019/most-innovative-companies-collaborative-platforms-ecosystems-changing-innovation.aspx>

Shoham, Yoav, Raymond Perrault, Erik Brynjolfsson, Jack Clark, James Manyika, Juan Carlos Nieves, Terah Lyons, John Etchemendy, Barbara Grosz and Zoe Bauer, "The AI Index 2018 Annual Report." *AI Index Steering Committee*, Human-Centered AI Initiative, Dec. 2018. Web. <http://cdn.aiindex.org/2018/AI%20Index%202018%20Annual%20Report.pdf>

Srivatsa, Mudhakar. "AI @ Edge." *IEEE CIC 2018 Tutorial*. IBM TJ Watson Research Center, 2018. Web.

[http://www.sis.pitt.edu/lersais/cic/2018/resources/AI\\_at\\_edge.cic2018.pdf](http://www.sis.pitt.edu/lersais/cic/2018/resources/AI_at_edge.cic2018.pdf)

Xie, Alian, and Tianhan Wang. "Revealed: the countries leading the race for blockchain patents" *iam*. 23 July 2019. Web. <https://www.iam-media.com/patents/revealed-countries-leading-race-blockchain-patents>

Yaraghi, Niam, and Shamika Ravi. "The Current and Future State of the Sharing Economy," *Brookings India IMPACT Series* No. 032017, March 2017. Web. [https://www.brookings.edu/wp-content/uploads/2016/12/sharingeconomy\\_032017final.pdf](https://www.brookings.edu/wp-content/uploads/2016/12/sharingeconomy_032017final.pdf)

Young, Josh. "Disney Files Patent for Rides to Read Your Emotions." *Theme Park University*, 31 Jan. 2017. Web. <https://themeparkuniversity.com/disney/disney-files-patent-rides-read-emotions/>