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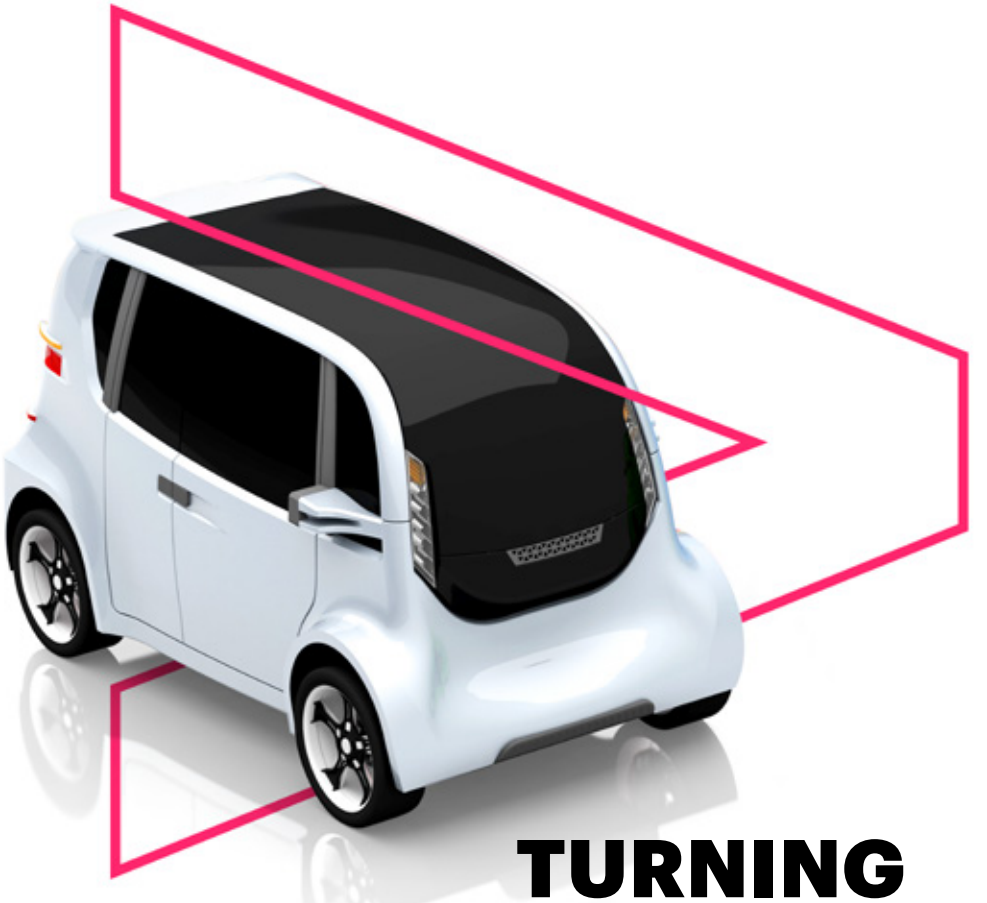


TURNING AUTOMATION INTO INTELLIGENCE

TOP 10 CHALLENGES FOR INVESTMENT BANKS 2017

TURNING AUTOMATION INTO INTELLIGENCE

03

INVESTMENT BANKS HAVE PLACED A HEAVY PREMIUM ON HUMAN CAPITAL. COMPETING INTENSELY WITH EACH OTHER TO HIRE THE SHARPEST MINDS FROM THE BEST SCHOOLS, MOST COMPANIES KNOW THE GRAY MATTER INHERENT IN THEIR INVESTMENT STRATEGISTS IS THE CRUX OF ANY INDUSTRY LEADER.

That gray matter, however, is no longer contained solely in human form. As technologies advance, investment banks will find that they compete not only for human expertise, but the best artificial intelligence as well.

A BRAVE NEW WORLD EMERGES

Rising costs and increased regulatory scrutiny leave many companies looking for creative solutions to reduce headcount in high-cost functions. Some are responding to increased regulation by implementing automation in areas such as compliance. Automation brings the added advantage of standardizing processes, something regulators usually appreciate.

QUICK FACTS

Machines can take on as much as

30%

OF THE CURRENT WORKLOAD

$1.2

TRILLION GAIN

in Gross Value Added for Germany alone through AI

Source: Accenture

But, simply automating could limit the potential benefits companies can reap. Automation is not equal to intelligence, nor does it bring the transformational insights of the latter. Automation can trim costs and decrease redundant workload for human employees but it cannot provide the advantages artificial intelligence can.

An explosion of artificial intelligence technologies has been possible in the last few years, thanks to the cloud and the nearly unlimited access to computing power it brings. We now have the capacity to accommodate an unprecedented amount of data. Artificial intelligence is the key to turning this flood of information into a wealth of usable insights to better run our businesses and drive growth.

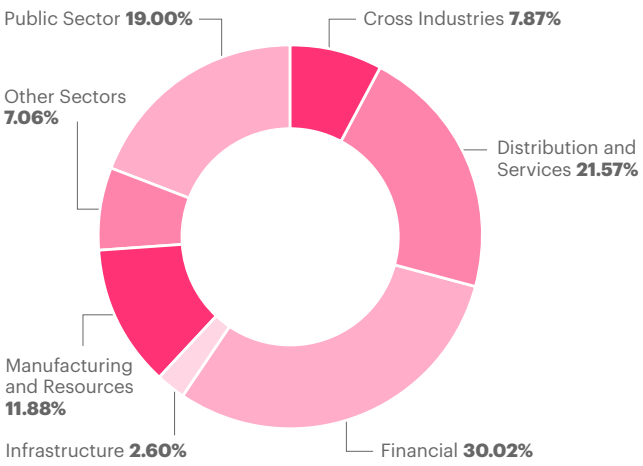
The most significant advances in artificial intelligence technologies include cognitive computing, natural language processing and digital recognition, with companies like Amazon and Google launching intelligent personal assistants for consumer use. Intelligent assistants and virtual workers with deep learning capabilities have not only surpassed humans on some intelligent quotient tests, but their software is starting to close the gap on emotional intelligence and can be increasingly indistinguishable from their human counterparts (when communicating remotely).[1]

Despite these gains, the securities and investment services sector just spent $272 million in 2014, however with a suggested 43 percent Compound Annual Growth Rate (CAGR) until 2019.[2]

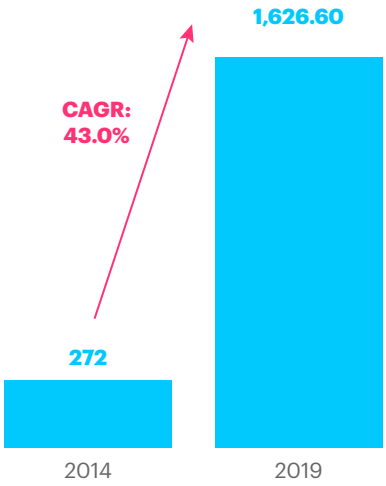
As a client-centric approach seems to become the norm across the board, and as investment banks wrestle with a complex regulatory environment that shows no signs of lessening, the competitive edge and agility artificial intelligence offers could become crucial to future success. The banks that resist moving beyond basic automation into the more unfamiliar area of artificial intelligence might be left behind as the leaders compete at an entirely new level.

Figure 1: Share of cognitive systems spending

Share of cognitive systems spend by vertical market 2015



Worldwide cognitive systems spending for the securities and investment services sector, 2014-2019 ($M)



Source: IDC's Worldwide Semiannual Cognitive Systems Spending Guide, March 2016

TAPPING HUMAN AND ARTIFICIAL INTELLIGENCE

While artificial intelligence is rapidly gaining momentum in the market, it needs to extend well beyond deploying analytics, natural language processing or machine learning systems in isolation.

The artificial intelligence needle really begins to move when companies incorporate it as an essential component of every business process, as a key layer in overall technology architecture. Artificial intelligence needs to move from being at the edge to a new layer of the IT stack.

In the near future, artificial intelligence could drive growth in two essential ways: intelligent automation and a hybrid workforce.

Intelligent automation for agility, speed, scale

Many capital markets companies are automating, but the level of intelligence is minimal yet. The key advantage to intelligent automation capital is that it is self-learning. Intelligent automation capital constantly improves, rather than degrades, in value.

As most banks rationalize business lines and refocus on a more client-centric approach to delivering value, they typically move away from product silos to an advice-oriented approach. This approach, as well as clients' desire to self-serve digitally, could require automation with sufficient intelligence for increased agility, speed and scale. For instance, Goldman Sachs Asset Management is harnessing computer-science based, machine learning capabilities, using artificial intelligence to study up to a million different analyst reports and identify factors affecting share prices.[3]

A hybrid workforce: unleashing innovation

The future 'virtual workforce' within investment banks will likely be comprised of a suite of technologies—from basic robotics process automation through cognitive computing and natural language processing. Not only could this workforce provide cost savings, it would allow its human counterparts to focus on roles that add the most value—from innovation to client relations. The probable end result is really a hybrid workforce—part human, part machine—that unleashes each element to do its best work.

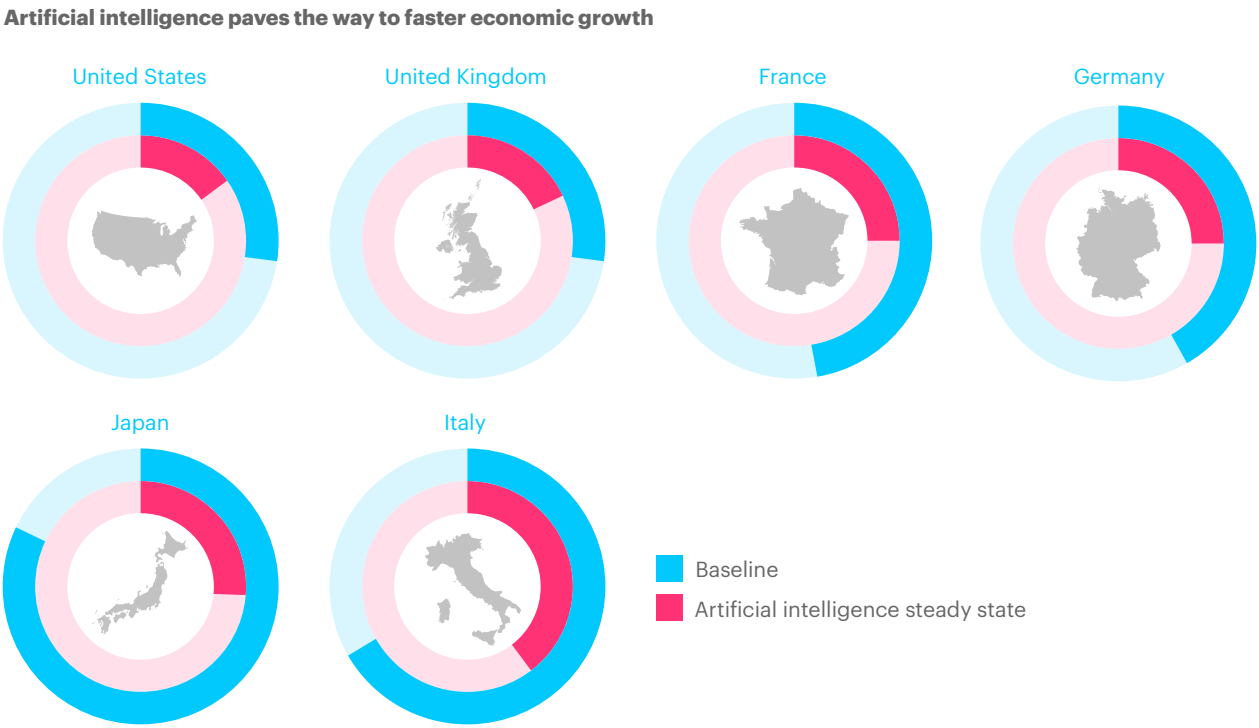
Insurance companies have already used artificial intelligence to help underwriters to better price risk, which could lead to decreasing loss ratios by as much as four points. One major insurance company has developed an artificial intelligence-based method to assess auto damage from photos taken after an accident. The Convolutional Neural Network algorithm Accenture created classified damage with 90 percent accuracy.

Because artificial intelligence is uniquely suited to predictive modeling, using machine learning to build a historical database of knowledge to pull from, it bests humans in this category. Mass-market wealth management clients are already benefiting from artificial intelligence agents in this manner. Online automated investment advisor Wealthfront tracks account activity and automatically applies that behavior to advise each individual client. Using artificial intelligence to analyze individual transactions, the company provides recommendations on diversification, taxes and fees that are specific to a client's financial profile and risk tolerance.[4]

WHAT THE NEAR FUTURE LOOKS LIKE

As banks begin to deploy holistic, virtual workforces, they could focus on the quick wins first—those areas that can be automated quickly with easily quantifiable savings. As automation scales, machines can take on as much as 30 percent of the current workload, leading to reductions in headcount and a transition of human attention to higher value work.

Figure 2: Time for economies to double in size



*Each circle represents 100 years of economic growth

Source: Why Artificial Intelligence is the Future of Growth, Accenture, Mark Purdy and Paul Daugherty, 2016

In short, machines using artificial intelligence could contribute to productivity not only because of their speed and accuracy, but also because they could enable people to make more efficient use of their time. This productivity increase, utilizing a hybrid workforce, dramatically reduces the number of years it could take for economies to double, according to recent Accenture research (see figure 2). Our study shows that the United States could feasibly double the size of its economy by 2040, with Britain not far behind.[5]

Imagine $8.3 trillion in Gross Value Added in 2035—and that is just in the United States. Japan could see $2.3 billion additional Gross Value Added mainly because of the innovation effects of artificial intelligence. Germany, an engineering and manufacturing powerhouse, could see a $1.2 trillion gain in Gross Value Added, according to our projections.

GROWING INTELLIGENTLY WITH AUTOMATION

Capital market activity in booming economies would be a welcome change from the stagnant growth rates of recent years. Investment banks aiming to win need to go beyond business process automation to add true intelligence to their systems. Here are some next steps banks could consider:

Embrace intelligent machines as increasingly valuable members of their workforce, as operations assistants, client liaisons and advisors.

Automate back-office and commodity functions (such as reconciliation) and further lower costs by using robotics to complement or even displace already low-cost utility labor arbitrage models.

Apply artificial intelligence to many front-office client interactions, such as client onboarding, risk appetite assessments, portfolio allocation and rebalancing, sales and trading—freeing people to perform higher value tasks. Digital assistants could complement and support complex, sensitive functions that still require heavy human involvement—relieving repetitive tasks, boosting process speed and increasing scale significantly.

Companies that adjust their organization and culture to incorporate intelligent automation as co-workers, rather than people replacements, could reap important rewards: more reliable performance and insight, extension of services to previously unprofitable markets (such as lower-end retail markets and smaller institutions) and continuing cost reductions. Automated intelligence tools and virtual workforces could drive a new, more productive relationship between people and machines through deeper analytics and recommendation engines, maximizing client services and product needs.

Gray matter still matters. It just now goes beyond a human casing. To conclude, it is the competitive advantage upon which most companies will stake their shareholder earnings. Do not be left behind.

> “THE BANKS THAT RESIST MOVING BEYOND BASIC AUTOMATION INTO THE MORE UNFAMILIAR AREA OF ARTIFICIAL INTELLIGENCE MIGHT BE LEFT BEHIND AS THE LEADERS COMPETE AT AN ENTIRELY NEW LEVEL.”

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CONTACT US

To discuss any of the ideas presented in this paper, please contact:

Jeff Brashear
Miami
jeffrey.brashear@accenture.com

Dominic Stanyer
London
dominic.s.stanyer@accenture.com

Greg Napolitano
New York
gregory.napolitano@accenture.com

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1 Machine Beats Humans In IQ Test For The First Time Ever, Tech Times, June 13,2015

2 IDC: Worldwide Semiannual Cognitive Systems Spending by Vertical Market 2016–2019 Forecast, May 2016

3 Securities Houses turn to AI for high-frequency trading, NIKKEI Asian Review, April 5, 2016

4 Robo-Advisor Wealthfront is now using AI to manage over $3 billion in assets, Yahoo Finance, March 31, 2016

5 Why Artificial Intelligence is the Future of Growth, Accenture, Mark Purdy and Paul Daugherty, 2016