

FUTURE
WORKFORCE
SURVEY
- BANKING

**REALIZING THE
FULL VALUE OF
AI**

Transforming the banking workforce to collaborate effectively with artificial intelligence will enable not only efficiency, but innovation and growth.

AI SET TO CHANGE THE WORLD – BUT CONTRADICTIONS LURK

A team of Harvard pathologists recently demonstrated why most commentators on the future of artificial intelligence – whether they be productivity optimists or job decimation pessimists – are missing the most important issue.

The doctors created an AI-based technique to identify breast cancer cells. It did well, scoring 92 percent accuracy, but it still fell short of human pathologists, who typically achieve precision rates of around 96 percent. The biggest surprise came when humans and AI combined forces. Together, they accurately identified 99.5 percent of cancerous biopsies¹, indicating that their diagnostic contributions were to some degree complementary, not duplicative.

Yet many commentators and executives still view AI from within the conventional automation paradigm: as a set of tools to perform traditional tasks more efficiently, make capital more

productive, and eliminate jobs. This tends to give rise to sensational headlines about the elimination of millions of jobs by battalions of artificial-intelligence-powered robots. We see it differently. We believe AI, when combined with human ingenuity and creativity, will allow both humans and corporations to achieve much more. Used in this way – which Accenture calls ‘applied intelligence’ – banks will gain the ability to solve complex challenges, develop new products and services, and break into or create new markets. By inspiring entirely fresh revenue streams, it heralds an exciting new dawn for the industry.

This isn't a distant utopia. Our analysis² indicates that between 2018 and 2022, banks that invest in AI and human-machine collaboration at the same rate as top-performing businesses could boost their revenue by an average of 34 percent and, critically, their employment levels by 14 percent.

We are not alone in holding this view. Three out of four of the senior banking executives interviewed for our cross-industry Future Workforce Survey believe the industry will be completely transformed by intelligent technologies, and that AI will be critical to their organization's ability to differentiate itself in the market. IDC forecasts³ that global corporate spending on cognitive / AI systems will increase at a compound annual rate of 54 percent between 2015 and 2020.

The survey also agrees with our optimistic take on employment prospects, with 67 percent of executives expecting AI to result in a net gain in jobs within their bank in the next three years. Somewhat surprisingly given the job-loss doom mongering, workers too are optimistic, with more than two out of three saying they believe AI will improve both their work and their work-life balance.

But these benefits from intelligent automation will not accrue automatically, nor equally to everyone. A variety of obstacles lie in wait as banks consider their AI strategies. One of the most critical is the workforce, and in particular, executives' views on their employees.

While most banking CXOs in our survey said their organization plans to invest in intelligent technologies over the next three years, they also said only 26 percent of their workforce is ready to work with these technologies. And yet only 3 percent plan to significantly increase their investment in reskilling programs in the next three years.

Another disconnect is executives' perception that their people are resistant to the introduction of AI. The truth, as mentioned earlier, is that most of them believe it will improve their jobs, making them more interesting (61 percent) and

creating opportunities for them (67 percent). They are confident of their ability to work with AI (88 percent) and believe it is important that they develop the necessary new skills (75 percent).

Artificial intelligence is likely to transform the world of business, and the everyday lives of people, as profoundly and beneficially as any of the great innovations of the past. But it is likely to do so in a much shorter timeframe, leaving incumbents less time to ponder their options. The impact will be industry-wide, and enterprise-wide, so it makes sense to have an enterprise strategy and enterprise-level leadership dedicated to AI.

Because the workforce too is such a critical enabler of future growth, it is important that planning and investing in it is a top priority. New skills, new roles, and new ways of working will be needed. Three steps will be essential for creating the banking workforce of the future:

1. Reimagine work to better understand how machines and people can collaborate.
2. Pivot the workforce to areas that create new forms of value.
3. Scale up 'new skilling' to enable people to work with intelligent machines.

The full potential of AI will only be realized by banks that transform their workforce to collaborate effectively with intelligent machines. This will take considerable time and effort, and should not be delayed. The workforce of the future starts now.

Banks that invest in AI and human-machine collaboration at the same rate as top-performing businesses could boost their revenue by an average 34 percent and their employment by 14 percent by 2022.

A FUTURE OF PROMISE

Banking is on the brink of a brave new world wrought by artificial intelligence.

This is a revolution in which intelligent technology meets human ingenuity, creating new sources of growth but also requiring a very different workforce.

Until now, robots, video analytics and other intelligent technologies – which together make up the artificial intelligence toolset – have been used to work in parallel with people, but mostly in automated isolation. Their role has been to improve process efficiencies and lower costs. Now, as companies invest in AI systems that can sense, communicate, interpret and learn, all that changes. AI can be applied in more nuanced ways within a broad enterprise structure to help banks move beyond automation and elevate human capabilities to unlock new value.

Some businesses have yet to apply AI in this way to improve efficiencies or customer outcomes. They are at the first of three stages of adoption: education. Most are at the second stage: prototyping and experimental initiatives. Only a few have reached the third stage, large-scale application, where they are practicing what Accenture terms ‘applied intelligence’: the ability to implement technology and human ingenuity across all parts of their core business to solve complex challenges, break into new markets, or generate entirely fresh revenue streams.

The growth prospects of the AI revolution are not limited to immediate outcomes. The invention of the microchip did more than just improve the speed, accuracy, and productivity of human workers; it created new industries, enabled new ways for us to connect with each other, and exploded our notion of what is possible. AI will have a similar far-reaching impact. But the speed of the digital revolution is unprecedented. According to Gartner, deep learning and machine learning – two key emerging AI technologies – will reach mainstream adoption within two to five years.⁴

If banks are to reap rewards from these developments, they need to take urgent action.

THE GOOD NEWS

Workers are impatient to collaborate with AI and to learn the necessary skills for doing so. And they have a vision for how AI can improve the lives of customers.

THE BAD NEWS

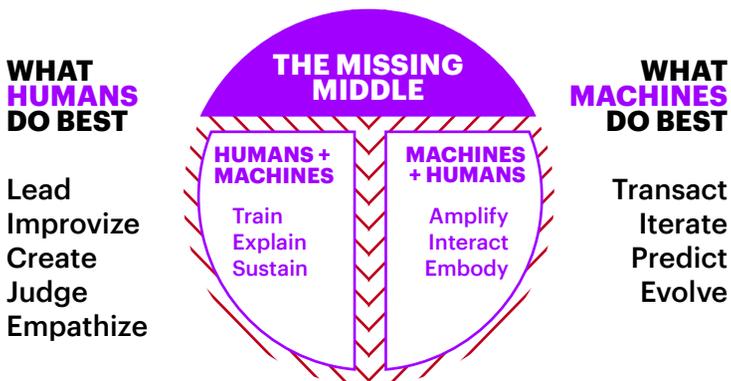
Many banking executives don’t recognize workers’ enthusiasm and aren’t funneling the necessary resources into ‘new skilling.’

In every part of my portfolio I think AI can enhance and produce better outcomes. And it's just a case of how we decide to approach that from a total organization perspective, because we are all in the same place. So, all the people who have jobs like mine have got some sort of a view of where we could go with this stuff. But at an organizational level, we haven't put all of that into a single strategy for how we want to go forward. And I think that's probably what's holding us back a little at the moment.

Su Duffey, General Manager HR Shared Services, Westpac Group

FIGURE 1

The respective strengths of humans and machines.



READY TO COMPETE?

It's time for bank executives to reimagine the work their people do in partnership with AI and to ask themselves tough, uncomfortable questions about their organization's readiness to compete.

From workforce planning to work planning

Do we have a clear understanding today of how work in our organization will be reconfigured by intelligent machines, starting in 2018? Which of our core activities will be automated, which will see human-machine collaboration elevate our workers, and which will remain the preserve of workers only? What will this mean for our operating model? Are we prepared for the enormous changes ahead as the nature of work is reimagined, starting now?

'New skilling' the future workforce

Do we have a clear view today of the knowledge, skills and mindsets required to work with intelligent machines in a way that creates real value? Where are our people against that benchmark? Is 'new skilling' already being integrated into our leadership development, learning and recruitment programs?

Positioning for the full value of AI

Do we have a clear understanding as a leadership team of how AI will be disruptive, not just with efficiency and productivity gains in our existing business model, but in creating entirely new markets, products, services and customer experiences? What new jobs will this create in our organization? Are we organized, and do we have the talent to take advantage of both the top-line and bottom-line opportunities as human-machine collaboration reshapes the nature of competition in the banking industry?

THE FUTURE WORKFORCE SURVEY

Are business leaders and workers ready to take on sophisticated human-machine collaboration on a large scale?

To find out, Accenture Research spoke with more than 1,200 CEOs and top executives working with AI. We also surveyed more than 14,000 workers spanning four generations and representing all skill levels. The research covered 12 industries and 11 countries and included interviews with people working with AI on a daily basis.

The banking sample comprised 100 CEOs and top executives and more than 1,300 bank employees – all at large organizations.

The study found that 77 percent of banks plan to use AI to automate tasks to a large or very large extent in the next three years. Fifty-one percent believe human-machine collaboration is important to achieve their strategic priorities. More than two out of three believe AI will improve workforce productivity, with almost all (99 percent) saying they intend to use it to enhance worker capabilities. This is already well under way – 28 percent of the employees surveyed reported that they work with intelligent technologies for more than 50 percent of their time.

This commitment is supported by IDC's forecast that worldwide cross-industry spending on cognitive and AI systems increased by 59 percent in 2017 compared to 2016, reaching US\$12 billion, and will rise to \$57.6 billion in 2021.³

But a significant barrier to the implementation of AI is banking executives' anticipation of resistance by employees. They believe on average only 26 percent of their workforce is ready to work with intelligent technologies, and most cite a growing skills gap as the leading factor influencing their workforce strategy.

BANKING INDUSTRY HAS A POSITIVE OUTLOOK ON AI

Banking executives are more optimistic about the impact of AI on their organization, their workforce and the industry as a whole than those in most other sectors. A comparison of the survey results from the banking sample, with those of the total cross-industry sample, reveals some interesting variances.

Bankers have a greater expectation that intelligent technologies will completely transform their industry (74 percent vs. 69 percent) and will be used to a large extent to assist in tasks (65 percent vs. 58 percent). They are more likely to believe it will improve productivity (68 percent vs. 60 percent) and result in a net gain in jobs within their company (67 percent vs. 63 percent).

Bank employees too are more positive than their counterparts in other industries – most expect the advent of AI to create opportunities for their work (67 percent vs. 61 percent). Forty percent are very confident of their abilities to work with intelligent technologies (vs. 33 percent), and 75 percent say it is important or very important that they develop their skills to do so (vs. 67 percent).

However, just over two-thirds of banking workers said they believe AI will create opportunities for their work. They expect it to make their jobs simpler (72 percent) and to improve their work-life balance (67 percent). Only 37 percent said it would threaten jobs in their organization, with 57 percent expecting it to expand their career prospects. And they know this won't come automatically – 75 percent say it's 'important' or 'very important' that they develop their skills to be able to work with AI in the next three to five years.

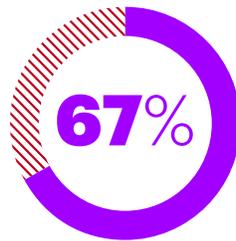
Banks need to seize this opportunity. Their people are not only impatient to thrive in an intelligent enterprise that can disrupt markets and improve their working experience; they are also eager to acquire the new skills required to make this happen. Yet, somewhat surprisingly, only 3 percent of executives said their organization plans to significantly increase its investment in training programs in the next three years. This low level of commitment, at a time when a new era of work is imminent, will radically curtail their ability to deploy and benefit from AI at scale.

Until now, digitalization has impacted groups of people in different parts of the organization. Applied intelligence, by our definition, will be much more pervasive. It will require dedicated leadership at the highest level and a cross-enterprise strategy with long-term budgeting. It also demands recognition that the banking workforce of the future will be significantly different than that which prevails today. The change will take a concerted, thoughtful effort that is likely to be ongoing. How can business leaders achieve this scale of transformation, building a cross-enterprise engine that gives a structure to AI, and elevates their workforce to create new value through human-machine collaboration? Our research points to three key actions.

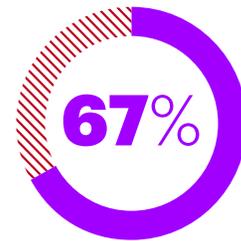
1. Reimagine work to better understand how machines and people can collaborate.
2. Pivot the workforce to areas that create new forms of value.
3. Scale up 'new skilling' to enable people to work with intelligent machines.



74% of banking executives believe the industry will be completely transformed by intelligent technologies



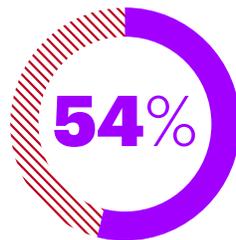
67% expect AI to result in a net gain in jobs in their organization in the next three years



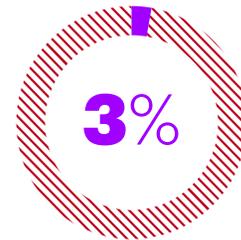
67% of banking employees expect intelligent technologies to create opportunities for their work



Banking executives say only 1 in 4 of their employees are ready to work with intelligent technologies



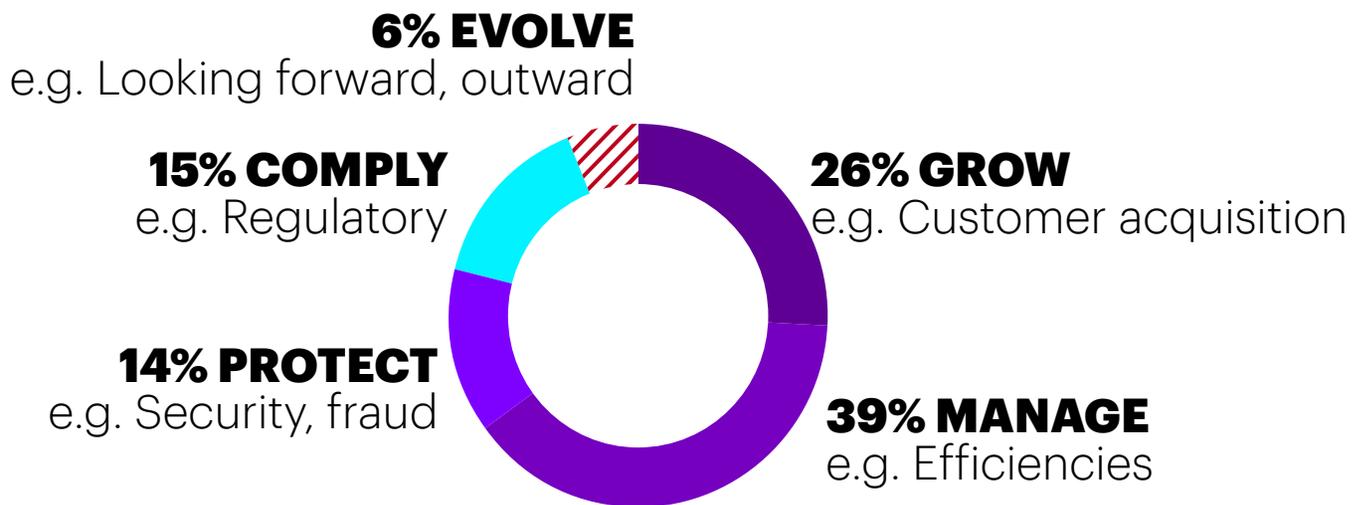
54% say the growing skills gap is the leading factor influencing their workforce strategy



But hardly any say they plan to significantly increase their investment in reskilling over the next three years

FIGURE 2

Allocation of FS firms' investments in future-aligned AI capability build.



Source: Accenture survey of 21 leading FS Chief Data Officers, December 2017 - January 2018

DRIVING GROWTH BY BOOSTING SALES AGENTS' CAPABILITIES

Econometric modelling by Accenture research has determined that even a 5 percent performance improvement for middle and top sales performers (achievable through AI augmentation) can result in a 4 - 5 percent revenue increase. AI can support agents by:

- Detecting customer emotions and suggesting responses to enable agents to respond with empathy
- Determining changing customer needs and suggesting customized solutions
- Enabling greater transparency of who is doing what, to enable better coordination and faster closes
- Creating broader social networks and reaching out to them
- Creating a social memory to remember customer needs and profiles
- Experimenting with and continuously improving sales techniques

This will result in:

- Higher sales
- Better customer relationships
- More customized customer solutions
- A faster sales process and close

1

REIMAGINE WORK TO BETTER UNDERSTAND HOW MACHINES AND PEOPLE CAN COLLABORATE

Forecasts of AI's impact on jobs vary. In January 2018 the World Economic Forum, in collaboration with Accenture, released analysis⁵ that reveals a smaller net loss of jobs than some studies have predicted.

The study estimates that 16 percent of jobs are at risk of displacement in five production industries, after accounting for potential job gains that would arise from the same trends. Bankers are more sanguine – 67 percent of those who participated in Accenture's Future Workforce Survey expect intelligent technologies to result in a net gain in jobs in their organization in the next three years.

But a focus only on job gains and losses misses a crucial point: the most significant impact of AI won't be on the number of jobs, but rather on job content. Forty percent of the banking executives we surveyed said that AI will transform the workplace. A similar number said traditional job descriptions have become obsolete as machines take on routine tasks and as people move to project-based work. Twenty-seven percent report that they've extensively redesigned jobs.

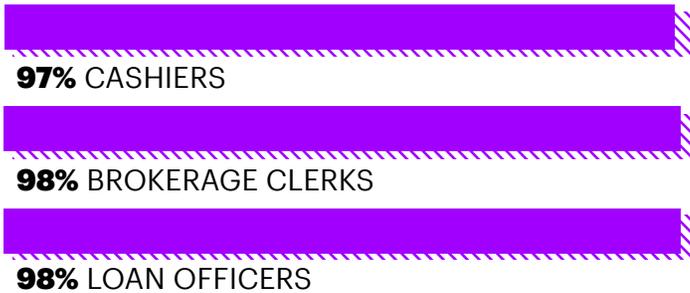
It should therefore come as no surprise that 62 percent of senior bankers said the proportion of roles requiring people to collaborate with AI will rise in the next three years. The tables below show how work is transformed and bank employees elevated.

Morgan Stanley⁶ is augmenting the work of its 16,000 financial advisors through the introduction of AI agents. By learning about their clients, the intelligent advisors continually interact with their human co-workers to proactively recommend a range of options that take into account their clients' changing financial situations. Financial advisors are consequently better placed to contact clients at the right time with more relevant advice.

FIGURE 3

The impact of intelligent technologies on banking roles and tasks.

Probability of automation, by role:



Tasks lending themselves to automation:



Sources: 'The Impact of Cognitive Computing in Management' Accenture Institute for High Performance and Accenture Strategy Study, 2015; 'Will You Be Replaced by a Robot?', This Is Money, May 2014.

...And some new roles will be needed in the future:

- MACHINE LEARNING ENGINEER
- DEEP LEARNING SCIENTIST
- FRAUD ANALYST
- ALTERNATIVE CURRENCY SPECULATOR
- LENDING TACTICIAN

KEB Hana Bank⁷, in South Korea, offers an eMortgage service to help buyers choose, buy, and pay for their homes. The mobile app allows customers to take photographs of the apartment that appeals to them. The system recognizes the building and sources all available information about it and the neighborhood, from property prices to community facilities. Combining this data with the customer's personal details, it instantly makes a binding mortgage offer. If the offer is accepted, the customer can proceed with the application, on her mobile phone, right up to the point where she needs to sign for the mortgage in the presence of a notary.

FIGURE 4

The evolution of work: filling the 'missing middle' where humans and AI collaborate to greater effect.

Today	Tomorrow
A contact center agent answers customer calls and messages, handling both minor and major issues.	Virtual agents and automation take care of simple queries and issues, allowing the human workforce to manage relationship portfolios and deal with exceptions and major issues involving complexity and sensitivity.
A communications specialist reads comments about the bank on social media and responds to those likely to have the greatest impact.	Supported by comprehensive scanning of social media, the specialist develops a strategy for optimizing the bank's profile and trains intelligent machines to respond to comments, rapidly and at scale.
A credit supervisor reviews loans granted, to ensure loan criteria have been met and risk minimized.	AI reduces duplication of effort by flagging marginal credit decisions and highlighting problematic issues. The supervisor can then focus and spend more time weighing the merits of these applications.
A risk and operations professional manually updates and checks various types of compliance reporting and controls for a business or functional area.	AI platforms, using machine learning and predictive analytics, simplify and drive efficiency in data gathering, raise the quality of controls, augment the risk and ops professional, and free up time for her to focus on analysis, an end-to-end view of the organization's risk profile, and early identification and rectification of issues.
A financial advisor spends a significant amount of time onboarding a potential customer, taking personal details and interrogating his financial situation. Then she goes away to do the research and hopefully secure the relationship.	The prospective customer goes online and uses AI to onboard himself. He completes the other administrative requirements and provides relevant research which he has sourced. This allows the financial advisor to focus on the true value of her offering: building the relationship and providing quality advice.

FIGURE 5

The evolution of roles when augmented by intelligent technologies.

From Operational Roles... <i>Data capture by middle-office KYC analyst</i>	... to Insight-Driven Roles <i>Focus on anomalies, using AI-driven analysis to unearth complex connections between entities and transactions. Move from data entry to analysis / assessment of risk</i>
From Mono-Skilled Roles... <i>Evaluating and approving loan applications</i>	... to Multi-Skilled Roles <i>Evaluating and liaising with customers on high-end loan applications, 'training' AI to decide on simpler loans, and explaining AI decisions to applicants</i>
From Generalist Roles... <i>Sales support</i>	... to Specialized Roles <i>Working with AI to qualify sales leads, feeding back results to further enhance the system's predictive capability</i>
From Technology-Oriented Roles... <i>Blockchain implementation and support</i>	... to Creative Roles <i>Exploring new ways blockchain can add value to the business</i>

There are three primary ways in which machines will enable people to work more effectively and drive growth (see Figure 1):

- Amplify the capabilities, effort, and impact of humans by augmenting their intelligence. Enhance their judgment and enable them to greatly increase their impact both within the organization and among its customers and partners.
- Interact at unprecedented scale with powerful databases and computing engines, extracting insights at great speed to enable humans to provide meaningful personalization, make better decisions, and drive growth.
- Embody everything the bank stands for. By converting principles, policies, and processes into consistent human practices, interactions, and experiences, machines not only help the bank's people understand what to do, when and in which way. More than that, they bring the vision of the bank to life in the form of a multitude of everyday actions.

In addition to AI enhancing human capabilities, humans will improve the performance of intelligent technologies. In previous research, Accenture explored the nature of some new roles and uncovered three new categories of AI-driven jobs: the 'trainers', 'explainers' and 'sustainers'.⁸

- Trainers will assist computers as they learn; for example, to recognize faces or identify images in photographs or videos.
- Explainers will interpret the results of algorithms to improve transparency and accountability for their decisions, helping to strengthen the confidence of both customers and workers in AI-powered processes. US banking regulations require financial companies to tell customers why their credit card applications are rejected, which is why Capital One is exploring ways to make AI more explainable.⁹
- Sustainers will ensure intelligent systems stay true to their original goals without crossing ethical lines, drifting away from desired outcomes or reinforcing bias. For example, this could include an ethics compliance manager to ensure that an AI-powered credit approval system does not discriminate against certain categories of customer.

A European bank realized that if it could predict which consumers were most likely to buy, build or renovate their home, they could significantly grow their mortgage business. Accenture helped it build an intelligent predictive model that combined internal and external data – and generated ten times the sales of control groups.

As AI becomes pervasive across the banking industry, 'raising' and training intelligent machines to function efficiently and responsibly will become a critical role and a significant creator of new jobs at different skill levels.

ACTIONS TO REIMAGINE WORK

While just over half of all banking executives acknowledge that getting human-machine collaboration right is critical to achieving their goals, few banks have adopted a systematic approach to unlocking the value that lies at the intersection of people and intelligent machines. Training is obviously critical, but the biggest barrier inhibiting them from doing more to retrain their workforce is a lack of clarity on the skills they should prioritize. The principle is to move the spotlight from jobs to the nature of the work itself before preparing workers with the necessary skills. When reconfiguring work, banks need to take three steps:

a) Assess tasks, not jobs

First, identify the new kinds of tasks that must be performed. Assessing the range of technologies and teams at your disposal, you can then allocate those tasks to people or machines, filling in the 'missing middle' (illustrated in Figure 1) with work best done by machines and humans in collaboration. For example, the assessment of investment options involves a variety of tasks from basic data collection and processing to interviews with key executives and the weighing of subjective factors. Intelligent machines can not only take over the former, but can also assist researchers with the more judgment-based tasks.

The process of allocating – or sharing – tasks between machines and humans is ongoing. Unintended consequences are an inevitable pitfall facing all organizations that allocate work to machines, so constant observation is needed and corrections to their initial allocations are likely.

 **Santander is going through a massive cultural transformation. Key to this is the identification of new capabilities needed. We are identifying them with Strategic Workforce Planning. Knowing that a 'digital mindset' will be key to the transformation, Santander created a digital academy through which the bank is taking steps to reinforce this mindset. Through the academy, we teach digital skills, agile methodologies, and data mastering. To foster the cultural transformation the bank has implemented many initiatives, among them a new performance management system called MyContribution. The objectives of MyContribution for the leaders are a mix of 'what' they have to achieve and 'how' they are achieving them. At the core of all this is the change in people's mindsets.** 

Roberto di Bernadini,
Global Head of HR,
Banco Santander

b) Create new roles

Set up new roles within a broader contextual shift as AI enables people to take on higher-value work. As Figure 5 shows, operational jobs will become more insight-driven and strategic, while mono-skilled roles will become multi-skilled. Already, 30 percent of bank employees have identified an increase in machine-worker collaboration as one of the top three trends that they see in the workplace. A trader at a Japanese investment firm explained how the demand for skills will change:

"We'll get workers to become familiar with AI or get workers who can make it smarter. They'll need experience as a trader and be strong in computers. They'll need to understand that deep learning works, but that the data can't be perfect without a knowledge of trading."

Jobs will also become more specialized as greater volumes of precise data allow more insights to be explored. For example, banks and other consumer brands will become increasingly dependent on AI chatbots to represent them in the mass market. Personality trainers will be required to develop the appropriate tone, humor, and level of empathy needed for different situations, as common human behaviors like sarcasm can still be very difficult for AI to interpret.

Microsoft uses a team including a poet, a novelist, and a playwright to develop Cortana's personality, without which this manifestation of the brand would be no different from any other.¹⁰

NatWest¹¹, a subsidiary of Royal Bank of Scotland, has been using a 'digital human' since 2017 to answer customers' questions via computer screen, tablet or mobile phone. Cora is programmed to respond to approximately 200 questions, and averages about 100,000 conversations a month.

c) Map skills to new roles

Once you have a full list of required tasks, skills, and newly defined roles, you can map that list against the skills present in your workforce. The gaps can be addressed through training or sourcing.

In addressing the gaps, and in creating new roles, banks should focus more on how the work can best be done than on the roles and responsibilities that make up the work. The reconfiguration of roles should be a flexible process that looks beyond full-time equivalents and considers a range of possibilities including build, buy, borrow and bot. This will enable skills to be redeployed as and when needed.



You have people that are excited, people that are neutral, and people that are super worried for their future. And the average of this mix is giving us how much the workforce is embracing this pace of change. But for sure the pace cannot be accelerated more than human beings are willing to accept. And at the same time, human beings cannot stop this change.

Chief HR Officer,
European-based
banking group

2

PIVOT THE WORKFORCE TO AREAS THAT CREATE NEW FORMS OF VALUE

AI is not simply the next in a line of new digital technologies. In the last century, perhaps only the airplane, the microchip and the internet have matched its potential to transform the way we work and live.

Today, AI and human-machine collaboration is beginning to have a significant impact on how enterprises conduct business. But it has yet to transform what business they choose to pursue. Just as the developers of the first computers famously scoffed at the notion that private individuals would be directly affected by their invention, we cannot know what opportunities await those who lead the AI revolution.

It is becoming clear, however, that as people and intelligent machines begin to collaborate in entirely new ways, business leaders will have to pivot their workforce not just once, but twice. The second and truly transformational shift may be less than a decade away in some sectors. In the meantime, business leaders must make a more immediate pivot to take full advantage of the opportunities human-machine collaboration presents today, which can create the springboard to entirely new future growth opportunities and market disruptions.

Banking executives seem to recognize the power of AI and humans to collaborate to create new customer experiences and business models. Seventy-six percent agree that adopting intelligent technologies will be critical to their organization's ability to differentiate in the market. Thirty-nine percent believe intelligent technologies will be behind every innovation they implement in the next three years. This suggests that banks are positioning themselves to move from the prototype stage of development to larger-scale applications.

CenturyLink, a US based telecommunications company, uses an AI agent called Angie to work with its sales managers. It performs the virtually impossible task of cherry-picking the best of 30,000 sales leads generated monthly. Angie sends emails to these leads, converses with them, decides which to drop and when to hand the likely prospects to salespeople. It produces 40 hot leads a month, and so far it has earned \$20 in new contracts for every \$1 spent on the system.¹²

FIGURE 6

The investment banking workforce of the future: a 2025 vision.

Function	Impact	Change in Roles	Removal of Roles	New Roles
 Client Service & Sales	Major salesforce reduction due to move to cloud-based, data-driven solutions. Retained workforce will focus on relationship management and client analytics.			
 Research	Reduction in many administrative and technology roles and focus of the remaining on 'training' and 'sustaining' types of roles.			
 Corporate Finance	Vast majority of technology, reconciliation and administrative roles moved to cloud-based service providers. Retained workforce will focus on management accountants and analysts.			
 Trading	Middle-office trade support roles reduced and replaced by cloud-based providers. Front-office technology support will disappear. Increase in front-office roles doing artificial intelligence, analytics, algorithms.			
 Wealth Management	Advisory workforce largely replaced by cloud or robo-advisors. Retained workforce will focus on high-value relationships, and client and market analytics.			
 Asset Management	Bulk of administrative and back-office technology support replaced by the cloud.			
 Cross-product Process	Manual processing and support capacity shifted entirely to industry utilities and cloud-based automation. Retained roles will focus on control and governance.			
 Data Management	Growth in new data management function as guardians are needed for proprietary data architecture and control.			
 Risk Management	Most technology roles replaced by cloud-based risk platform providers and industry utilities for reporting. Retained roles will focus on risk control.			
 Regulatory Compliance	Increase in headcount, and improved surveillance and analytics tools run from cloud services.			
 Technology	IT engineering teams replaced by cloud, with value-adding IT architects moved to business teams. IT and security architecture teams will design and assemble new services from internal IP and XaaS. A new cloud service management team will manage third parties and digitally monitor business operations in real time.			
 Finance	The vast majority of technology, reconciliation and administrative roles will move to cloud-based service providers. The retained workforce will focus on management accountants and analysts.			
 HR & Corporate Function	Some administrative and technology roles will be reduced.			

Firm function key:  Client services  Core IB  Cross-product processing  Corporate core

Impact key:  Primary impact  Secondary impact

Source: Accenture Strategy – Investment Banking Capitalizing on Talent

ACTIONS TO PIVOT THE WORKFORCE

Banks should take immediate steps to pivot their workforce, but must resist the pressure to capture only short-term market advantage. They need to create the mindset, acumen, and agility that will be required to seize longer-term transformational opportunities. This means ensuring that the workforce can adapt to new customer markets, that organizational processes can flex accordingly and that leadership is ready to champion a new culture. This won't be easy – executives say their greatest people-related challenge is to establish a flexible and agile workforce.

These four steps will help companies make that first, crucial pivot:

a) Align the workforce to new business models

Develop a clear distinction between the things that humans do best and those that machines do best. Then shift the purpose of your workforce to best support your customer value proposition. If that includes easy access to a friendly, expert robo-advisor, draw on your best 'trainers' to ensure that your solution not only has the technical capability to guide customers' choices, but also the personality to make the interaction an enjoyable one.

 **We redesigned the organizational structure in a way that we can increase the dynamics in every job role and can swiftly increase our focus to the areas that require it most at that point in time.** 

CEO, US banking group

b) Recognize the business case

Don't simply harvest efficiencies to benefit the bottom line; turn them into investments in the future workforce that will propel new business models.

Take order processing and accounts payable collections. One Accenture client has developed a human-AI hybrid workforce where algorithms predict which orders face a risk of cancellation or payment disputes. Employees can therefore spend more time – and are better equipped – to attend to high-risk situations and proactively mitigate negative outcomes.

This approach has required developing a range of expertise and capabilities – from industry sector knowledge to analytics and data interpretation, to the soft skills required to work with customers in new ways. But the investment is paying off, with potential cash flow improvements of over \$50 million along with increased working capital and a bottom line profit of more than \$10 million in the first year of implementation.

The venture capital firm Deep Knowledge Ventures¹³ has appointed an AI tool, which it calls Vital, to its board to improve decisions. Vital participates in votes on whether to invest in new opportunities.

c) Organize for agility

As people do less repetitive work and instead participate in a series of project teams, they must be given more autonomy and decision-making power.

An open culture is needed to encourage experimentation. That openness must extend to involving people in decisions that will change their working environment and the work they do. Organizations must also redesign the processes and organizational structures that enable the fluid assembly and disassembly of project teams, freeing people from traditional functional constraints.

d) Foster a new leadership DNA

An agile workforce that leverages the best of intelligent technology and the best of human ingenuity ushers in a new set of expectations for today's leaders. It's critical that they not only understand and are positive about AI, but that they spend time thinking creatively about how it can be used to create new sources of value throughout the bank.

As hierarchies collapse and cross-function teams assemble and disassemble, leaders become co-creators and collaborators with their people. And, while AI enables individuals to take on higher-value responsibilities, it also pushes decision-making closer to where the action occurs. Ultimately leadership isn't a level — you need to build leaders at all levels.

/// The opportunity for newly skilled individuals to collaborate with increasingly intelligent machines and software will accelerate the shift from an assembly line approach to a more fluid 'assemblage' of teams and technology, capable of higher levels of creativity and innovation. ///

Accenture's Paul Daugherty and Jim Wilson,
'Human + Machine: Reimagining Work in the Age of AI.'

3

SCALE UP 'NEW SKILLING' TO ENABLE PEOPLE TO WORK WITH INTELLIGENT MACHINES

To fill the new and reconfigured jobs of the intelligent bank, organizations will need new approaches to training. 'New skilling' programs must be rapid, flexible, tailored and large-scale to maximize the value humans and machines can create together.

In its effort to rapidly pivot more than 160,000 of its employees to be conversant with new IT skills, and more than 100,000 to be job-ready in less than two years, Accenture developed a 'new skilling' framework based on a progression of skills from awareness to expert, while relying on a suite of innovative learning methods grounded in neuroscience research.

Even though most banking executives in our survey identified skills shortages as a key challenge, very few said their organization plans to significantly increase investment in training programs in the next three years. The challenge of reskilling the workforce to fill the new roles – even assuming employees welcome the change – should not be underestimated.

Banks can achieve more with less, but only if they are willing to rethink their training methods. Accenture has actually lowered its cost of training per hour by more than 25 percent since it began aggressively expanding its digital learning channels, while increasing the number of hours its people spent being trained by 40 percent.

ACTIONS TO SCALE UP NEW SKILLING

Three steps to expand the reach of skills programs:

a) Prioritize skills for development

Selecting skills training will depend on the type of AI you use and the size, sector and existing skills levels of your organization.

Creative skills will be important. However, in our survey, banking executives rank the following as the top five most important skills in the next three years: leadership, communication, resource management, information ordering and judgment / decision-making.

Among the most valuable human skills required to collaborate with AI will be the judgment skills needed to intervene and make or correct decisions when machines struggle to make them. Also critical will be the ability to interrogate systems to gain maximum insight. This requires knowing how they categorize information and understanding the parameters of their algorithms. Teaching intelligent machines will be fundamental, both through explicit processes based on feeding them with quality inputs, and through the implicit processes of learning on the job alongside people.

Walmart¹⁴ trains its US employees using Oculus Rift virtual reality headsets, allowing them to experience and practice responding to real-world scenarios. Think about handling a difficult customer, with the instructor and trainee peer group able to provide performance feedback as they watch remotely through the employees' eyes. Following early success of the pilot, Walmart has now rolled the program out to all 200 of its US training academies.

The so-called soft skills, which will play an increasingly important role as machines take over the 'mindless' jobs, will pose the greatest challenge for trainers. These attributes may be unique to humans but they are far from evenly distributed within the species. Reskilling will help, but achieving the required levels will not always be possible. This may force banks to take hard decisions about their strategy and their investments in their workforce.

Sustained success will depend on practicing responsible AI, ensuring that data and systems are managed to be fair, transparent and accountable. This will require training programs that extend from regulatory imperatives, the ethical behaviors of people and machines, and the business practices that follow.

/// We're supposed to hire people with really good judgment and they're supposed to exercise that judgment. Unfortunately, activity has converted over time into much more process- and procedure-based work. So unwittingly we're losing the value of that judgment... More and more, machines will be able to take over the bulk of that activity. But the age of the expert isn't dead; we actually want experts to be able to exercise expertise – we'll just have a better ability to ensure it's focused on the work that truly requires judgment. ///

Nick Reed, Group General Manager Risk, ANZ Bank

b) Account for willingness and skill

It is important to tailor training programs to suit a range of employee 'starting points' – the differences in both motivation and skill levels. Our research shows that confidence levels vary by age (see Figure 7), but that workers are willing to learn. We asked bank employees to self-rate their skill and willingness levels (see Figure 8). A full 57 percent saw themselves as 'high skill / high willingness' when it comes to learning new capabilities.

FIGURE 7
Workers' confidence in their skills and abilities to work with intelligent technologies.

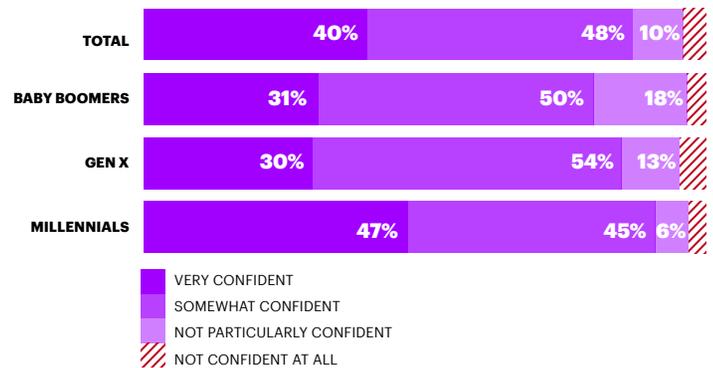


FIGURE 8
Workers' estimation of their skill and willingness to work with intelligent technologies.



While this number may be on the optimistic side, the approach illustrates the need to gauge the varying motivations of diverse workforces and to target programs at different generations and skill levels. Overall, the research revealed that 67 percent of bank employees think AI will have a positive impact on their work. When asked what factors would motivate them to develop new skills, almost half (47 percent) of Baby Boomers want time during the workday for training, but only 39 percent of Millennial respondents feel that need. And while at least 45 percent of Gen X, Gen Z and Millennials are looking to learn new skills to advance their careers, only 33 percent of Baby Boomers feel the same way.

c) Go digital to create innovative learning experiences

Digital learning tools, such as virtual and augmented reality, can provide realistic simulations to help bank employees master new tasks. The same technologies can help reinforce correct procedures in the front office – monitoring how employees execute tasks and coaching them to do it the best way.

Digital technology also helps to democratize learning. Accenture’s 3,000 Pinterest-like digital learning boards are curated by approximately 900 experts and give 435,000 employees access to more than 300 content categories with topics ranging from technical skills, such as blockchain, to softer skills such as coaching. Employees have completed more than 42 million learning activities via the digital boards since their inception, with over 29 million completed in the past year alone.

“ We need people that are adaptable, because work is changing and it’s changing rapidly. We’re much more likely to hire you on the basis of your mindset and your ability to adapt than we are on your specific and deep subject matter knowledge, because that might not actually be that relevant in a year’s time. ”

Nick Reed, Group General Manager Risk, ANZ Bank

Transforming the workforce to realize the full value of AI

1. Reimagine work to better understand how machines and people can collaborate. Audit all activities, from back-office functions to contact centers, to understand where intelligent machines can play a role in your business. Plan your future workforce by weighing the respective strengths and potential contributions of humans and machines.
2. Pivot the workforce to areas that create new forms of value. Having looked at where AI can help, think about where your people should focus their energy and time to deliver the greatest value.
3. Scale up ‘new skilling’ to enable people to work with intelligent machines. Start the upskilling journey now, selecting pivotal roles or skills, mapping out the path to future roles and skills, and ensuring that HR partners strategically with the major transformation projects that are underway.

HUMANS HELPING AI HELP HUMANS

Artificial intelligence is redefining the nature of value creation at unparalleled speed and scale. It is reshaping core banking processes and has the potential to transform customer experiences and establish entirely new business models.

There are still many who believe AI is a technology that enables automation, reducing employment and delivering a greater return on capital. The reality is a lot more complex and nuanced. AI is a set of tools with an almost infinite number of potential applications. One group of these will improve efficiencies. A much larger, more interesting and more rewarding group will bring people and machines together in often surprising ways to produce amazing outcomes.

Employees will function at levels that will surprise even themselves. Their synergy with intelligent machines will give rise to products, services and even business models that will take growth to a new trajectory. The potential, when collaboration is perfected, is barely possible to overstate.

But there is much work to be done before this can be achieved. What is needed is an urgent shift in approach. Banks must give deep and careful thought to how this set of intelligent tools can best be employed. That will take an enterprise-wide strategy and one or more senior leaders focused almost exclusively on applied intelligence. A key part of this strategy will be to fundamentally reimagine work, and to start moving toward a state of advanced, effective collaboration. In other words: Humans helping AI to help humans. Combined with radical changes to organizational structures and processes, this will put the business on the path to realizing the promise of artificial intelligence.

REFERENCES

1. World Cancer Research Fund International. <http://www.wcrf.org/int/cancer-facts-figures/data-specific-cancers/breast-cancer-statistics>
2. Accenture econometric modelling, "Reworking the Revolution", 2018, page 42. https://www.accenture.com/t20180124T125137Z__w__us-en/_acnmedia/PDF-69/Accenture-Reworking-the-Revolution-Jan-2018.pdf
3. Worldwide Semiannual Cognitive/Artificial Intelligence Systems Spending by Industry Market 2016–2020 Forecast. (2017, June). IDC (Doc #US42749817). <http://www.idc.com/getdoc.jsp?containerId=US42749817>
4. Gartner. Hype Cycle for Emerging Technologies 2017. <https://www.gartner.com/smarterwithgartner/top-trends-in-the-gartnerhype-cycle-for-emerging-technologies-2017/>
5. "The New Production Workforce: Responding to Shifting Labor Demands", World Economic Forum in collaboration with Accenture, January 2018. http://www3.weforum.org/docs/WEF_White_Paper_The_New_Production_Workforce.pdf
6. "Morgan Stanley's 16,000 human brokers get an algorithmic makeover", Bloomberg May 2017. <https://www.bloomberg.com/news/articles/2017-05-31/morgan-stanleys-16-000-human-brokers-get-algorithmic-makeover>
7. "Hana Bank wins global innovation awards in two categories", KEB Hana Bank website. <http://www.hanafn.com/eng/pr/news/newsDetail.do?seq=2307&page=4>
8. "The Jobs that Artificial Intelligence will create", H. James Wilson, Paul R. Daugherty and Nicola Morini-Bianzino (2017), MIT Sloan Management Review. <https://sloanreview.mit.edu/article/will-ai-create-as-many-jobs-as-it-eliminates>
9. "The Financial World Wants to Open AI's Black Boxes", Knight, W. (April 13, 2017) MIT Technology Review. <https://www.technologyreview.com/s/604122/the-financial-world-wants-to-open-ais-black-boxes/>
10. "When AI becomes the new face of your brand", H. James Wilson, Paul Daugherty, Nicola Morini Bianzino, Harvard Business Review, 2017. <https://hbr.org/2017/06/when-ai-becomes-the-new-face-of-your-brand>
11. "NatWest Bank tests Cora, an AI bot that will answer customer questions", The Guardian, 21 February 2018. <https://www.theguardian.com/money/2018/feb/21/natwest-bank-tests-cora-an-ai-bot-that-will-answer-customer-questions>
12. "CenturyLink using AI to boost sales efficiency", C. Wilson, Light Reading, 2017. <http://www.lightreading.com/automation/centurylink-using-ai-to-boost-sales-efficiency/d/d-id/735575>
13. "Algorithm appointed board director", BBC, 2014: <http://www.bbc.com/news/technology-27426942>
14. "Walmart is using virtual reality to train its employees", R Feloni, Business Insider UK: <http://uk.businessinsider.com/walmart-using-virtual-reality-employee-training-2017-6?r=US&IR=T>

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