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Point of View

# THE RISE OF INTELLIGENT AUTOMATION IN FINANCIAL SERVICES

Apply a holistic approach  
to RPA and AI



# RPA + AI = Intelligent Automation

The financial landscape is changing with Fintechs and startups that are highly agile and cloud-enabled putting enormous pressure on FSIs (Financial Services Institutions) to transform their business models and at the same time drive cost efficiency, customer-centricity, trust and compliance. Artificial Intelligence (AI) is now seen as a catalyst in digital transformation, creating new operating models and customer experiences amid shifting competitive dynamics. However, it is understanding the steps of the journey necessary that creates significant value, from streamlining and automating financial process tasks to delivering data analytics and insights that allow bankers to make informed decisions - with speed and accuracy - that will result in more profitable growth, less risk, business model scale and provide customized service to the always-on customer. How to stay ahead of the game and keep up with the pace of environmental changes driven by regulators, changing customer preferences, and advancing technologies.

Algorithms, big data and dedicated AI systems enable faster decision-making and deeper learning. This combination of big data and dedicated AI systems helps FSIs to become more intelligent about people's spending habits, health and lifestyles, but also predict customer needs for different scenarios of spending and saving. Having often started

with a focus on Robotic Process Automation (RPA), FSIs are now looking to AI to amplify the value to be achieved for the business, customers and employees – what we call 'Intelligent Automation'.

Intelligent Automation for FSIs is a new bundled offering that consists of 'RPA + AI' enabling customers in banking, capital markets, and insurance to accelerate their digital transformation.

Today many FSIs are investing in innovation and are working on ways to include RPA with machine learning, virtual agents (bots), cognitive services and analytics. Their role has been to improve process efficiency, drive workplace productivity and lower costs. But there is a growing need for a much more holistic approach, one where RPA and AI combine to drive better employee and customer experiences.

RPA has created a useful rules-based, decision-making approach that is programmatic and controlled, but this is just the first step. The move to process automation and conversational virtual agents through to cognitive services and deep machine learning is broadening the range of options available to FSIs. In addition to automating repetitive, high volume tasks, we now have natural language

engagement and interaction, intelligent tools to learn from employee behaviour and analytics-driven insights personalised for a specific customer.

Adopting an integrated approach can lead to numerous benefits:

- Increased process speed, reduced costs and improved quality
- People redeployment to higher value activities
- Improved employee experience and customer retention/advocacy
- Increased flexibility to cope with short-term volume variations
- Ability to cope smoothly with regulatory/compliance changes
- Improved customer research and highly targeted marketing/next best options
- New services based on AI-generated insights
- Competitive advantage based on proprietary algorithms, data and knowledge



# The Way Forward

So how do you apply RPA+AI in a much more joined-up way to create these benefits? How do you drive intelligent automation and integrate human and machine capabilities to differentiate yourself in the market?


Some FSIs have yet to apply this integrated approach. They are still at the first stage of adoption: learning and awareness. Most are at the second stage: setting up pilots and proof of concepts in various parts of the organisation. This typically includes chatbots, robo-advisors and RPA. Only a few have reached the third stage, combining advanced analytics and human creativity across the business to solve complex issues, create new insights or generate new services.

AI is most effective when it augments human workers and enhances business outcomes, rather than simply replacing humans with bots and automating processes. FSIs must learn how to manage humans and machines together to successfully deploy AI. Companies that seek to implement AI need to be aware of what Jeanne Ross, principal research scientist at the MIT Center for Information Systems Research, calls “the fundamental flaw in AI implementation.” According to Ross, “Companies that view smart machines purely as a cost-cutting opportunity are likely to insert them in all the wrong places and all the wrong ways.”<sup>1</sup>

Having started with RPA, FSIs are now looking to add and integrate other tools and build an AI ecosystem. Accenture estimates that nearly one in five North American banks are already using RPA technology and another 63% plan to do so within a year.<sup>2</sup> 22% of North American banks are already using machine learning and NLP, and another 55% intend to do so within the next year. The study found that 75% of insurers plan to use AI to automate tasks to a large or very large extent in the next three years. 68% believe it will result in a net gain in jobs in their organization over that period. Employees too have a positive outlook – 68% expect intelligent technologies to create opportunities for their work.

IDC forecasts that global corporate spending on cognitive/AI systems will increase at a compound annual rate of 54% between 2015 and 2020. In fact, worldwide cross-industry spending increased by 59% in 2017 compared to 2016, reaching US\$12 billion, and will rise to \$57.6 billion in 2021<sup>3</sup>.

So, what are the key challenges to adopting intelligent automation in your organisation?

An aerial photograph of a circular stone structure, possibly a well or a small tower, situated in a dense forest. The structure has a central opening and is surrounded by a low wall. The surrounding area is lush with green trees and a winding path is visible in the background.

“Companies that view smart machines purely as a cost-cutting opportunity are likely to insert them in all the wrong places and all the wrong ways.”



# Data: Get It Sorted

One of the first exercises for successful AI deployment is to develop good, non-siloed data. This is a critical step and cannot be ignored. However, there is a balance: don't go for 100% clean data – that's also unrealistic. What you need is a holistic view of your data, across the business, which is critical for AI to work. However, the real challenge is to pull this data together, especially structured and unstructured information. Cross-channel and cross-product data is extremely useful, but it can be very difficult to obtain, given the different data structures, update frequencies, and challenges associated with internal politics and project prioritization.

We've developed an approach for getting ready to adopt AI specifically focussed on innovative data use.<sup>4</sup> It adopts a design-led data management approach, which is a framework to uncover the right questions and be prepared to experiment with ideas. It includes how to get your data house in order, scaling beyond the proof of concept stage and continually looking at business outcomes. By continually repeating the process, you'll sharpen your data and be able to apply it within an AI context to solve complex issues for your business – such as minimising fraud loss, predicting customer churn or recommending next best options.

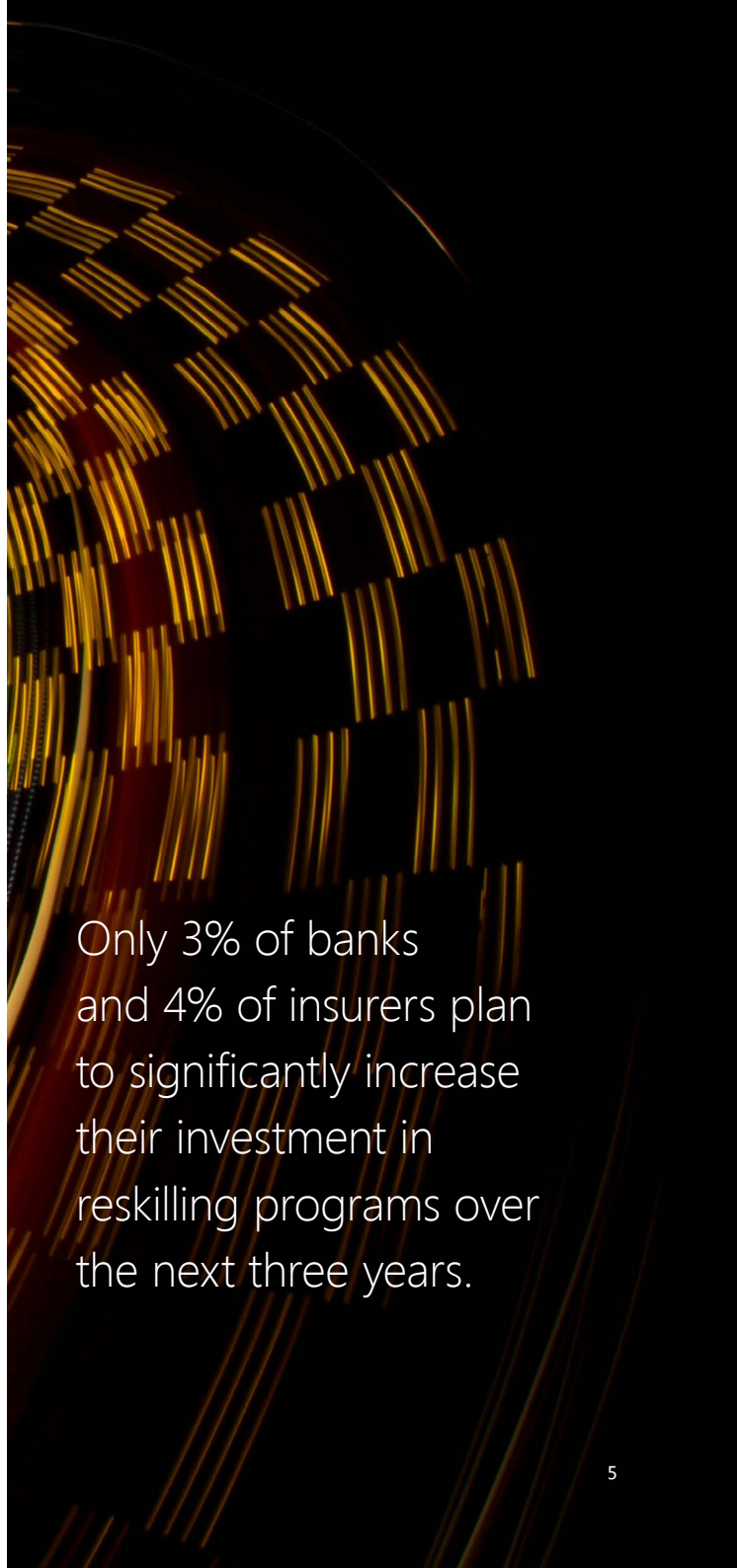


# Investment Required: You Need New Skills

Many FSIs see significant potential in this area, but do not provide their staff with the skills and tools to exploit these opportunities. A recent Accenture study estimates that for banks which embrace intelligent automation at the same rate as top-performing businesses, revenues could rise by 34% by 2022, but, critically, employment could also increase by 14%; for insurers the figures are 17% and 7%, respectively. However, only 26% of their workforce is ready to work with these technologies and only 3% plan to significantly increase their investment in reskilling programs in the next three years; for insurers it was 25% and 4%.<sup>5</sup>

Related to this, the nature of jobs in the financial services sector will change and new ones will be created as greater volumes of data generate more insights. For example, FSIs will become increasingly dependent on chatbots to represent their brand. Personality trainers will be required to develop the appropriate tone and level of empathy needed for different situations, as common human behaviors like humour or sarcasm can still be very difficult to interpret. If anything, there will be a greater need to “insert humans” into the automated process to produce balance and equity.

It is one thing to advise on the optimal stock portfolio and another to ask about the recent graduation of your client’s daughter. Paul Daugherty and James Wilson of Accenture have examined this in detail in their recent book ‘Human and Machine: Re-Imagining Work in the Age of AI’. Microsoft, for example, uses a team including a poet, a novelist, and a playwright to develop Cortana’s personality<sup>6</sup>. The good news is that employees are ready and willing to learn new skills in this area. They are happy to adapt and work in new roles. But investment must take place.



Only 3% of banks  
and 4% of insurers plan  
to significantly increase  
their investment in  
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the next three years.



# Working with Cobots: AI Augmenting Humans

FSIs already use AI to automate repetitive, rule-based manual tasks, such as AML monitoring or credit card fraud detection. But AI is evolving a broader range of skills and capabilities that can sense, comprehend, interpret and learn. AI-powered machines will engage with both customers and employees in ways that will display humour and empathy. According to the Accenture survey, 79% of FSIs believe that within the next two years, AI will work next to humans in their organizations as a co-worker, collaborator and trusted advisor. As more and more customer interactions with FSIs are conducted via AI over the next few years, machines will become the first point of contact for the organization.

However, this raises concerns about the AI decision-making process, especially ensuring they are both ethical and within a regulatory framework. Deciding who can be granted a credit card will need a clear audit trail, given that machines do exhibit bias<sup>7</sup>. A 'black box' approach will not work here. In the previously mentioned Accenture study, 90% agree that employees and customers need to understand how AI-based decisions are made, and 29% expect to be fully transparent regarding such decisions within the next two years. However, 75% agree that FSIs will struggle with such issues. Accenture has also developed a 'fairness' tool to help resolve issues in this space<sup>8</sup>. Establishing a code of digital ethics will be a prerequisite for such activity.

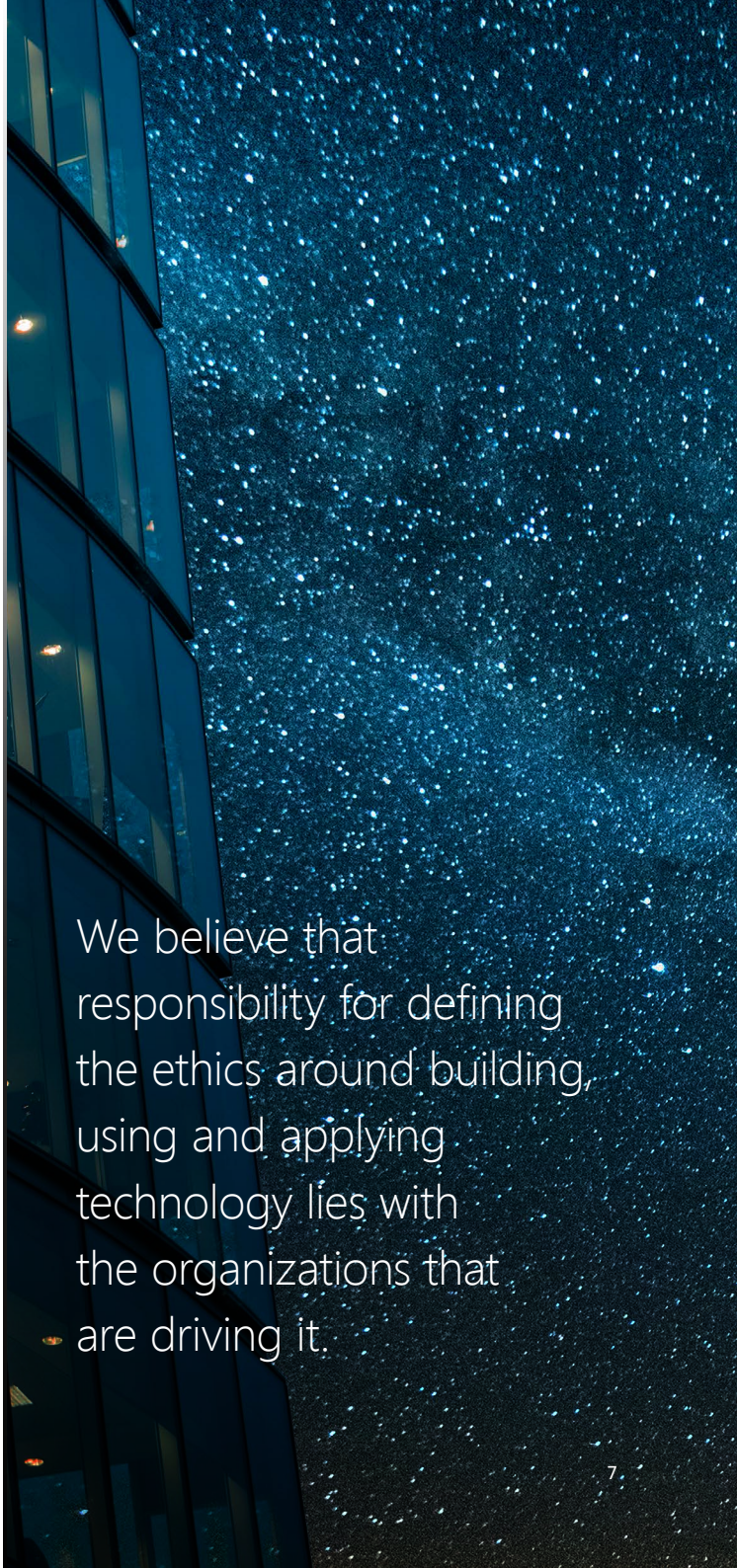




# Digital Ethics: Create a Framework

We believe that responsibility for defining the ethics around building, using and applying technology lies with the organizations that are driving it. Those who lead the charge must play an active role in developing both informal and formal regulations. Microsoft is putting a stake in the ground and recently described the societal impact of AI in a ground-breaking book entitled 'The Future Computed: Artificial Intelligence and its role in society'<sup>9</sup>. It examines the use cases and potential dangers of AI technology and

gives guidance on how to avoid or mitigate them. Accenture has launched new services for testing AI systems, powered by a unique "Teach and Test" methodology designed to help companies build, monitor and measure reliable AI systems within their own infrastructure or in the cloud<sup>10</sup>. Digital ethics was also front and center at the recent World Economic Forum in Davos, Switzerland, where several sessions were devoted to AI and how to use it responsibly. At Avanade we have also developed a four-pillar approach<sup>11</sup>.

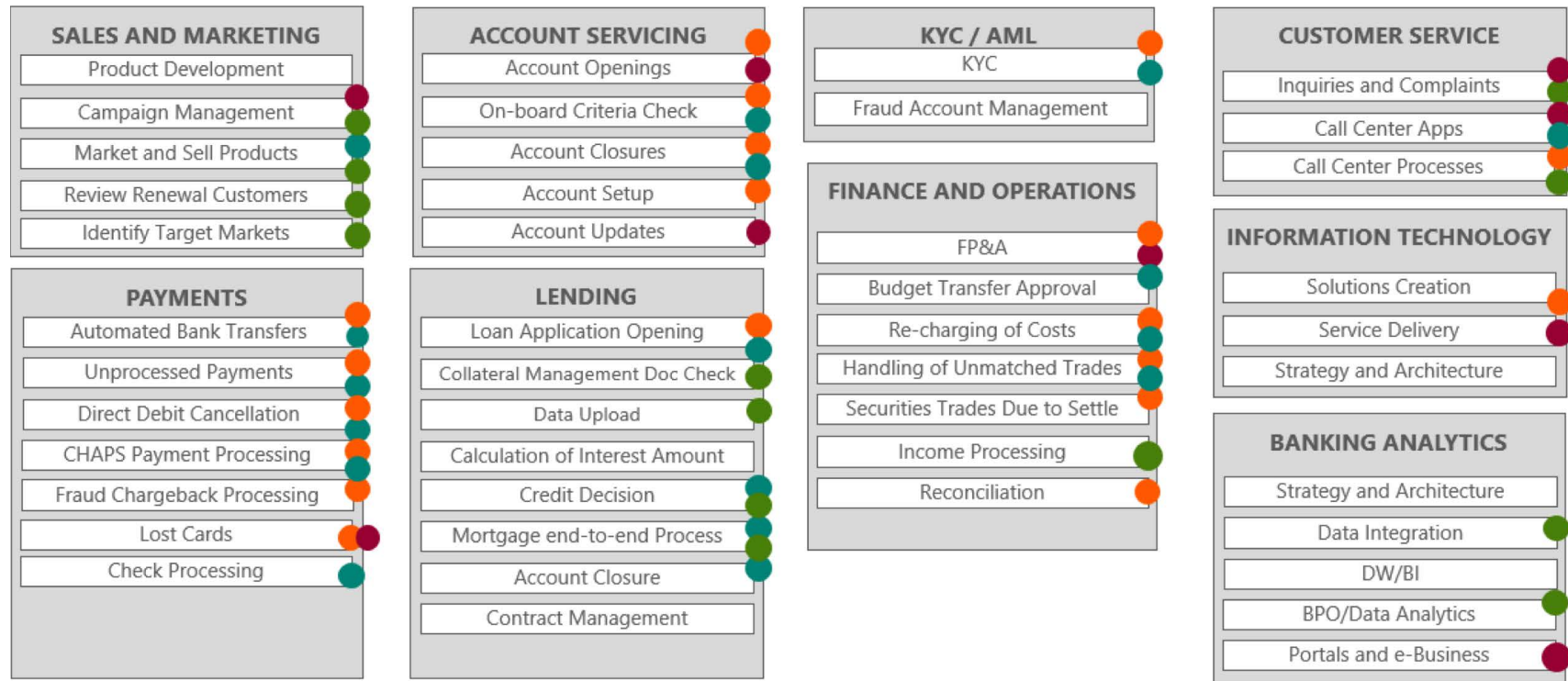


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# Intelligent Automation: Joined-up AI

## 1. Know where to focus

In a typical FSI there are many areas where a holistic AI approach can be applied:





# Intelligent Automation: Joined-up AI

## 2. Highlight relevant Use Case scenarios

We are uncovering first stage applications that drive value quickly in the following areas:

- Customer onboarding (Optical Character Recognition (OCR) and RPA)
- Virtual agents for customer service/intelligent help desk (OCR and RPA)
- Fraud Detection (Machine Learning & RPA)
- Credit issuing (Chatbot & Machine Learning & RPA)
- Setup Car Insurance (OCR & RPA)
- E-mail classification: (Machine Learning Text Analyser & RPA)
- Payments (OCR & RPA)
- FNOL (Chatbots, Cognitive Services & RPA)

## 3. Assess your capability and your development needs

This includes a 'flash assessment' to give an initial informal view of where a client stands and suggestions of how and where it can be enhanced with leading practices. Here's a client example:

	Priority	Enhancement Need	Executability	Operational State	Demand
	<i>Relative priority of enhancement before implementation begins</i>	<i>How close the section is to being in line with leading practices</i>	<i>Is it in its current form practically implementable</i>	<i>Is it currently in use or close to it</i>	<i>How much of a perceived need is there by stakeholders</i>
Strategy And Roadmap	●	🕒	○	○	●
Target Operating Model	●	○	○	○	●
Talent Management	●	○	○	○	●
Governance Framework	●	🕒	○	○	●
Security And Infrastructure	●	○	○	○	●
Automation Delivery Methodology	●	○	○	○	●
BOT Command Center	●	○	🕒	○	●
Communication Plan	●	🕒	🕒	○	●
Demand Management	●	🕒	🕒	🕒	●
Risk And Control Framework	🕒	🕒	🕒	🕒	🕒
Production Change Management	🕒	🕒	🕒	🕒	🕒
Change Management Strategy	🕒	○	🕒	🕒	●
Vendor Relationship Management	🕒	🕒	●	●	🕒
Robotics Innovation Framework	🕒	🕒	●	🕒	🕒
Benefits Tracking	🕒	🕒	🕒	●	○
Training Plan	🕒	🕒	🕒	●	○
Knowledge Management	🕒	🕒	🕒	○	🕒
Frugal Experiments On Robotics/AI	🕒	🕒	●	●	🕒
Co-innovation With Business & Vendors	🕒	🕒	🕒	🕒	🕒

Key					
4	Critical	Complete	Intuitive	Operational	High Demand
3	High Priority	Minor effort required	Self Study	Needs to be rolled out	Moderate/Specific demand
2	Nice to have	Major effort required	Training Required	Training Required	Low Demand
1	Not required	Nothing Exists	Non Executable	Not ready for consumption	No demand

# Intelligent Automation: Joined-up AI

## 4. Know where you need to partner

Invest in your own people and assess what mix of in-house and external capabilities will generate best value, given your time horizons and risk tolerance. There's just too much to be done and time isn't on your side. We can provide a turnkey solution on Azure, provisioning the right environment within hours, through to a managed cloud service, where we can stand up robots on demand and price by bot – a genuinely flexible digital workforce. We can provide security in the public cloud as the credentials and password management are owned by you. Ongoing deployment, management and maintenance are all offered using DevOps functionality. Monitoring and integration can be in a hybrid or fully cloud model. This is something we have done for multiple FSIs. Avanade is an eleven-time winner of Microsoft Partner of the Year.

With the flexible Azure platform and a wide portfolio of AI productivity tools, you can build the next generation of smart applications where your data lives, in the intelligent cloud, on-premises and on the intelligent edge.

Achieve more with a comprehensive set of flexible and trusted AI services – from pre-built APIs, such as Cognitive Services and Conversational AI with Bot tools, to building custom models with Azure Machine Learning for any scenario. Modern AI tools designed for developers and data scientists help you create AI solutions easily with maximum productivity.

In addition, Microsoft's Azure proposition brings clear benefits:

- Scale: provisioning environments instantly on demand and removing infrastructure purchase requirements
- Security: the platform is protected by Microsoft's digital forensics team, who collaborate globally with law enforcement, and allows credential management, monitoring and access
- Certification: Azure is the first platform to be certified under ISO/IEC 27018 for cloud privacy and holds ISO 27001, which is considered the equivalent to GDPR compliance
- Monitoring: the Microsoft AI platform can be monitored using PowerBI and Azure Maintenance Functionality

- Maintenance: Azure uses DevOps-supported functionality, removing the need for ongoing infrastructure maintenance and support costs
- Integration: Microsoft's Azure Service Bus capabilities, and Accenture/Avanade's IP as a middleware solution can be integrated easily
- DevOps: Microsoft's tooling allows infrastructure as code deployments; Avanade and Accenture adopt modern engineering practices
- Flexibility: robots can be deployed to the Azure Cloud or on-premise in a client's infrastructure, yet managed in the same seamless way with Azure Stack
- Microsoft is the undisputed workplace and cloud<sup>12</sup> leader with AI infused into its product set.

Combining Accenture's industry and consulting experience with Avanade's technology expertise in the Microsoft ecosystem creates a compelling proposition for FSIs who wish to take a more holistic approach to AI development.



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#### About Avanade

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