AI in Action

How Microsoft is making AI real for every organization and every employee today

Microsoft AI

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It's time to put AI in action

In today's complex and disruptive world, industries shift rapidly, and organizations face immense pressure to remain agile and resilient. Now more than ever, it's critical for organizations to consider how AI can help them achieve their goals.

As leading organizations are discovering, AI can be a powerful lever to help accomplish what's important, from developing new revenue streams to creating measurable efficiencies in core processes. In addition, employees are motivated to use AI solutions that help them uncover critical information, improve decision-making, streamline teamwork, and avoid tedious repetitive tasks. In fact, we recently conducted a survey of over 10,000 employers and employees worldwide, which found that 91% of employees want new skills that will help them succeed alongside AI (KRC Research, 2020).

> *"We are pursuing AI so that we can empower every person and every institution with tools of AI so that they can go on to solve the most pressing problems of our society and our economy."*
>
> **— Satya Nadella**
> CEO, Microsoft

Organizations that harness and scale AI quickly will have a long-term competitive advantage. A recent Harvard Business Review study that surveyed 1,500 C-suite executives reported that companies had more success when they skipped proof of concepts (Harvard Business Review, 2020). These companies scaled AI projects twice as often and achieved nearly three times the return on their AI investments when compared to their counterparts. While not every organization can move at this pace, it's clear that the time is now to get started, and a willingness to move quickly is a major key to success.

We understand that realizing the full potential of AI does not happen overnight, but it is time to move beyond proof of concept and put AI into action. There are a wide range of AI applications available today suited for different use cases and levels of expertise. These include common business applications with AI built-in, out-of-the-box AI solutions for specific business processes, and AI platforms for creating custom solutions. The next step is not just to scale AI with additional use cases across the organization, but also to define a strategic vision for AI, prepare leaders and employees to succeed with AI, and consider how to use AI responsibly.

Microsoft's AI vision

At Microsoft, our vision is to help every organization in every industry—no matter where they are in their AI journey—**put AI into action at scale to create meaningful business impact**. We are committed to empowering organizations to implement solutions that deliver real business value, resilience, and differentiation today while also creating a roadmap for the future.

To realize this potential and impact, AI must be infused into every business function in transformative ways and put in the hands of every employee as part of their everyday work, regardless of their role or technical expertise.

Gartner identified the democratization of AI as a top 10 strategic technology trend for 2020 and predicted that by 2024, "low-code application development will be responsible for more than 65% of application development activity" (Gartner, 2020). But we alone provide an integrated, comprehensive set of offerings that bring AI to everyone today—from developers and IT teams to business users in every department. **AI for Everyone** is Microsoft's unique perspective and commitment to making this real for our customers, which is squarely aligned with our corporate mission to empower every person and every organization on the planet to achieve more.

In this paper, we'll show why now is the time to put AI in action. To do this, we'll first share the importance of establishing a holistic approach to AI and the four key areas that need to be considered in any AI approach. Next, we'll show how AI offers immediate impact by transforming core processes across industries. Finally, we'll cover how we are putting the power of AI in the hands of every employee —from developers and data scientists to business users— through a wide array of AI tools and technologies. No matter where you are today, the time is now, the urgency is critical, and the future is fast approaching. We would love to be your partner on your AI journey.

The importance of a holistic approach

The key to unlocking success with AI is to think about the big picture. When making AI investment decisions, considering typical factors like solution features and financial impact is a good starting point. But to achieve more with AI across the organization, those considerations should be aligned with a broader plan. Organizations that are finding the most value from AI are using it throughout their organization to reimagine business models, help teams work smarter, and drive operational efficiencies with an eye toward long-term transformation.

We recommend a holistic approach that focuses on three areas: AI strategy, AI culture, and AI responsibility. As these competencies become stronger, they generate more momentum, engagement, and value across the organization.

Define an AI strategy

With all of the opportunities AI offers, it's easy to get caught up in the breadth of applications and possibilities but not know quite how or where to start. In order to take the first step forward in the AI journey and create a clear path to success, an organization needs an AI strategy to guide AI-related decisions and investments. In AI Business School, we have created a simple but powerful framework for defining an AI strategy and prioritizing where to start.

The first step in this process is to assess the **external industry environment**. This includes factors like shifting buyer behavior, new competitors and business models, changes in government regulations, and the arrival of new technologies. Understand what kinds of AI solutions are table stakes in the industry and what is differentiated.

Secondly, it is important to evaluate where AI can add the most **value in the organization**, or what has the highest return on investment. AI solutions should be measured by their impact on business outcomes.

And finally, it's critical to consider the relevant AI **skills, capabilities, mindset, and overall state of the organization**. Do the technical departments have the skills and tools necessary to integrate or develop AI solutions? Is the quantity and quality of data enough to build custom AI solutions? Is there buy-in from leaders, managers, and front-line employees? Each of these factors define an organization's level of "AI maturity" and where to get started. The AI Maturity Model Assessment can help you evaluate your maturity and identify next steps. It is also important to note that lack of technical skills should not be a barrier to getting started. As you will see, we have powerful AI solutions for every employee, from the everyday user to the developer and data scientist. We also have comprehensive and world-class resources on MS Learn that any organization can leverage as part of their AI strategy.

Enable an AI-ready culture

Like any groundbreaking technology, a new AI solution affects more than just software. New AI solutions create disruption at the cultural level: they require people to collaborate in new ways, gain new skills, and adopt new processes.

This cultural change doesn't just involve the worker using an AI solution or the developer creating it. Leaders across business and technical teams should be continually involved in design, implementation, maintenance, and evaluation to ensure that solutions are aligned with business goals and processes.

Organizations need to learn how to become data-driven, enable cross-functional collaboration, help employees gain new AI-related skills, and lead effective change management.

To learn more about creating an AI-ready culture, visit the AI Business School.

Scale AI across your organization

As we've mentioned, in many cases companies can use out-of-the-box AI solutions where Microsoft creates and continually updates the machine learning models under the hood.

However, those looking to gain additional benefits with more customized solutions should consider MLOps. MLOps, or DevOps for machine learning, enables data science and IT teams to collaborate and streamline the machine learning (ML) lifecycle at scale, from building models to deployment and management.

MLOps processes and technologies ultimately facilitate better model quality, accelerate time to market, and improve business results. They help teams collaborate and stay on the same page through auditable documentation. They provide the ability to centrally manage assets like models, environments, code, and datasets so teams can track, share, and reuse them. They also create efficiencies and accelerate the lifecycle with automation and repeatable workflows. Whether models are built in-house or by an outside partner, MLOps is a critical component of scaling AI across an organization.

Look into the Azure Machine Learning platform to learn more about how to streamline model reproducibility, validation, deployment, and retraining with MLOps capabilities.

TransLink, the transportation network in Vancouver Canada, wanted to use Azure Machine Learning to provide highly reliable bus departure time estimates for its riders. This meant creating an AI model for each bus stop and segment in the system. With over 18,000 models to train, TransLink relied upon MLOps to help them:

- Automate model training and deployment processes through pipelines
- Create an approval process for automated model training results
- Integrate a data drift system into build-and-release pipelines so that retraining is triggered automatically if data drift is detected

The solution improved the accuracy of predicted departure times by 74% and reduced average customer wait times by 50%.

Prioritize AI responsibility

As with all great technological innovations, the use of AI can have unintended consequences. While organizations can't predict the future, it's our responsibility to anticipate and mitigate risks to ensure AI is created and used in a responsible manner. If AI will become as integrated into our lives as cars, we need to subject it to the equivalent of auto safety standards.

At Microsoft, we are committed to helping organizations develop and use AI responsibly. We recognize that every organization will have their own beliefs and standards for responsible AI, but we want to share what we're learning in hopes of providing a useful perspective.

We encourage all organizations to develop human-centered AI principles to guide their AI development and use. In 2016, we released our own six AI principles that shape everything we do in AI: fairness, reliability and safety, privacy and security, inclusiveness, transparency, and accountability.

To put those guiding principles into practice, we recommend establishing a system for internal oversight that provides guardrails for how AI solutions are used and monitored. It's also helpful to stay informed about regulations, sponsor training programs for employees, and collaborate with other organizations.

For organizations developing AI solutions in-house, we encourage technical employees to leverage practical design guidelines, checklists, and tools that make it easier to identify and mitigate potentially harmful issues. To help organizations find these resources, we've launched an online Responsible AI resource center than compiles important research projects, open-source software, managed services, and other tools that our developers and data scientists leverage to better understand, protect, and control AI systems.

To learn more about responsible AI, visit the Responsible AI Learning Path in our AI Business School.

Microsoft's six AI principles

- **Fairness:** AI systems should treat all people fairly
- **Reliability & Safety:** AI systems should operate reliably and safely
- **Privacy & Security:** AI systems should be secure and protect privacy
- **Inclusiveness:** AI systems should empower everyone and engage people
- **Transparency:** AI systems should be understandable and explainable
- **Accountability:** People should be accountable for AI systems

AI for Good initiative

At Microsoft, we are also providing our AI technology, resources, and expertise to empower those working to preserve cultural heritage, solve humanitarian issues, improve the health of communities, and create a more sustainable and accessible world. Learn more about our five AI for Good programs and the 600 projects we are already supporting by visiting the AI for Good homepage.

Transforming processes in every industry

Leading organizations across industries are already making powerful use of AI to gain competitive advantages. In today's fast-paced and highly competitive landscape, all organizations need to embrace AI to remain agile and resilient. At Microsoft we are working with customers across every industry to accelerate business process transformation with enterprise-ready, AI-infused experiences.

As mentioned, a key part of formulating an AI strategy is to evaluate what industry competitors are doing and where AI can add value. It's important to consider two kinds of use cases: those that provide quick wins in response to economic pressures and market opportunities, and those that create a path for future transformation. We recommend evaluating use cases in both categories:

Respond: Not every AI application involves revolutionary changes. In fact, using AI to improve or automate existing processes is becoming essential to remaining competitive. There are countless powerful AI applications that can optimize processes, empower employees, and engage customers in every industry.

Reimagine: Achieving lasting competitive advantage requires creating value with AI in unique ways. These custom solutions address the biggest challenges and opportunities in an organization and help create new revenue streams or business models.

Respond

While transformative AI innovations like self-driving cars will undoubtedly change the world, there are countless other, more immediate applications of AI that provide crucial advantages. Every organization has processes that can be improved quickly with the right kind of AI, whether it's automating routine tasks or unlocking insights. Adopting these common AI solutions helps organizations respond to increasing cost pressures and gain a significant leg up on their competition.

Let's say a firm manufactures electronic components of some kind. If their quality control experts can inspect 100 parts per hour while their competitor down the road has an AI system that lets their experts inspect 1,000 parts per hour, the firm is quickly going to lose market share or revenue. Applying AI to these tasks will save labor, avoid mistakes and waste, speed outcomes, improve quality, and capture revenue that might otherwise be lost.

Quick win AI examples

- Detecting defects in manufactured parts or systems
- Using a chatbot to interact with customers using natural language
- Compliance monitoring in legal contracts or financial traders
- Detecting fraudulent behavior or anomalous incidents
- Analyzing sentiment in customer feedback or social media
- Scoring marketing leads
- Supply chain, inventory, or price optimization
- Demand or revenue forecasting

Take Piramal Glass for example. They provide glass packaging for pharmaceuticals, cosmetics and perfumery, and specialty food and beverage industries. Piramal Glass leveraged AI to detect product anomalies and defects, improving production efficiency and product quality. Their solution has led to a 1% improvement in production efficiency and a 5% reduction in defects, which translates into enhanced predictability of delivery timelines for its customers.

> *"Glass manufacturing is a complex industry with fixed costs and capacities that are therefore very sensitive to variations in demand. It was vital to optimize the operations to drive profitable growth."*
>
> **– Vijay Shah,**
> Executive Director,
> Piramal Enterprises Ltd

Packaged partner solutions

An easy way to get started is by leveraging pre-built solutions from our strong network of Microsoft partners. Our AI partners have unique expertise across Data & AI and have custom solutions that they have built on Azure to deliver immediate impact through industry and horizontal solutions.

For example, our partner KPMG, a leading professional services organization, used Azure Cognitive Services to build an AI-powered risk analytics solution for financial institutions. This solution uses AI to transcribe and translate calls, then analyze communications for fraud, misrepresentation, data breaches, and other compliance risks. This cuts time, cost, and effort by as much as 80%. One KPMG client has already used the solution to increase the effectiveness of its compliance program while reducing its overall cost.

To find out more about how our partners can help your transform your organization today, visit our digital transformation homepage and our AI partner ecosystem homepage.

Reimagine

In the long-term, organizations that are finding the most value from AI are using it to reimagine their business models. Achieving lasting competitive differentiation with AI requires leveraging knowledge that only your organization has: your data and the expertise of your employees.

As an example of this type of transformation, consider Al-Futtaim, the leading lifestyle conglomerate in the Middle East. Al-Futtaim adopted an intelligent customer data platform (CDP) that uses Azure data services to aggregate their customer data from across more than 120 brands and provide holistic insights. These insights build a complete picture of each buyer, helping Al-Futtaim create hyper-personalized experiences for its customers that foster customer loyalty and boost profitability.

IndiaLends, a credit underwriting platform that serves over 5 million consumers, uses Azure AI to power their entire business architecture from security to customer checkout. This intelligent solution has reduced their internal processing time by 50% for transactions and has led to an increase of 75% in net new business in the first 6 months.

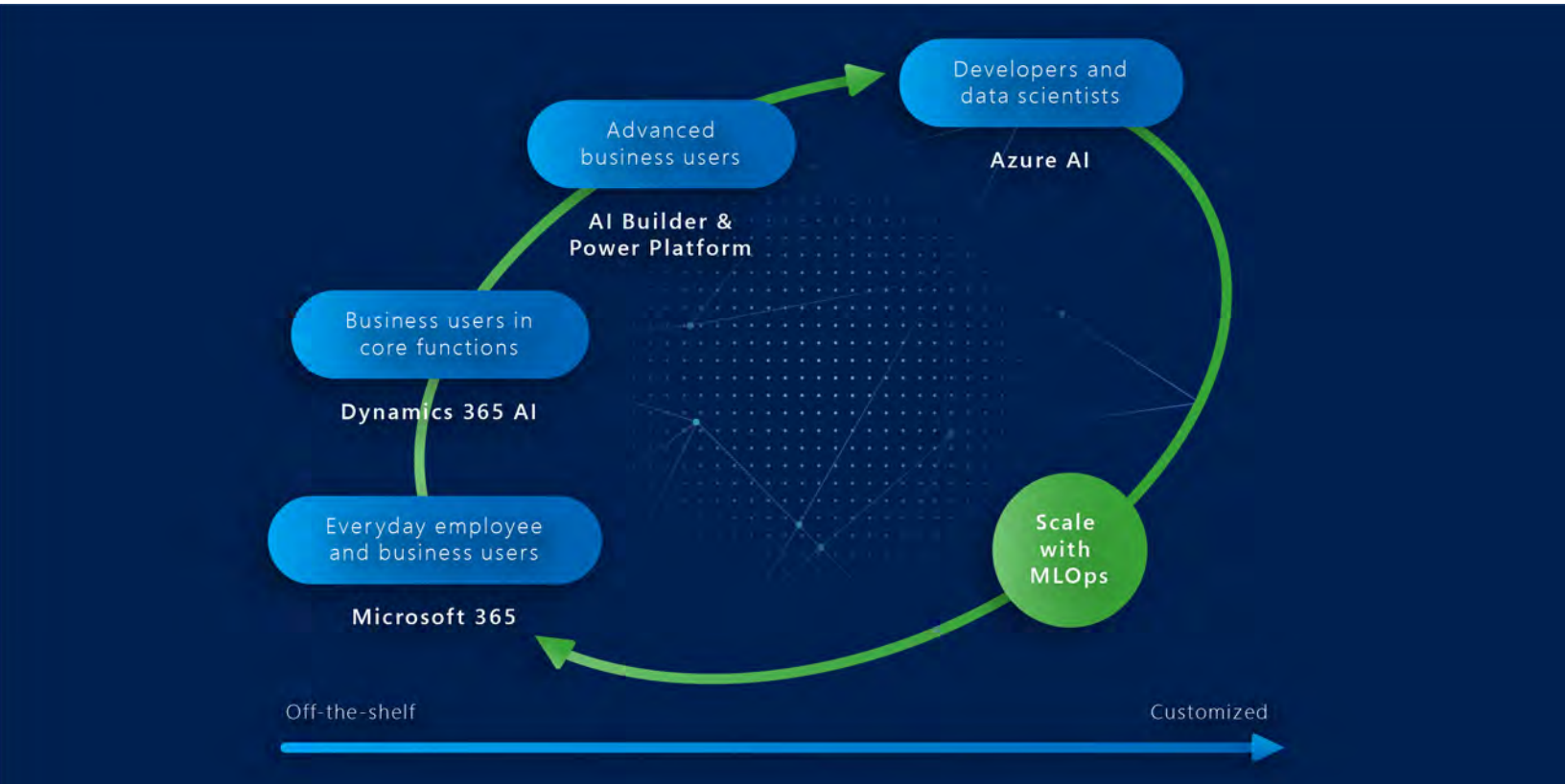
As another example, National Oilwell Varco (NOV) saw an opportunity to transform its manufacturing operations with AI. Using Microsoft Autonomous Systems solutions and a new approach to machine learning called machine teaching, NOV engineers built their own intelligent control systems that reduce machine downtime and help their operators focus on more strategic tasks.

To read more examples of how Microsoft customers have leveraged AI to create industry-changing solutions, please visit our AI customer stories webpage and Microsoft AI business homepage.

Bringing AI to every employee

Transforming business processes is a key step in an organization's AI journey. But to truly realize the potential of AI, it's essential to bring the power of AI to every employee—from developers and IT teams to business users in every department. Microsoft has a breadth of solutions and technologies that empower everyone in ways that are relevant and meaningful to their daily work.

For developers and data scientists, we have the industry-leading AI platform and services that can help them seamlessly develop, deploy, and manage a wide range of transformative AI solutions. For subject matter experts like researchers and engineers who have critical business expertise, we're putting the power of custom AI models directly in their hands in revolutionary ways to help accelerate their learning cycles and apply their knowledge more efficiently and effectively. To empower business users to achieve more, we've infused AI capabilities directly into the products and services they already use every day like Outlook and Word. We've even developed low-code and no-code tools that enable them to transform their work by creating their own AI models.



AI for developers and data scientists

If you are looking to build custom AI models and applications for your business, data scientists and developers are key to turning AI ambitions into reality. Armed with the right set of tools, they have an opportunity to play an integral role in growing their organizations' AI capabilities.

Microsoft empowers developers and data scientists to be AI leaders with a comprehensive set of AI services and learning resources. Building on over 27 years of investment, Microsoft Research continues to achieve breakthroughs across vision, speech, and language. Those breakthroughs are built into our Azure AI services, so developers and data scientists can build on the cutting edge while still using familiar coding languages and frameworks.

Azure AI offers a range of technologies suited for different business use cases and skill levels, from cognitive APIs and drag-and-drop model training to advanced data science tools. We are committed to an open, flexible approach where users can work with the tools and frameworks of their choice and deploy AI across the cloud and the edge. Our vision is to help our customers invent with purpose, with productive, mission-critical, and responsible solutions.

Building custom machine learning models

Azure Machine Learning is ideal for creating custom machine learning (ML) models. It's an enterprise-grade platform that streamlines the end-to-end machine learning lifecycle, including data preparation, training, testing, deployment, and ongoing model monitoring and management. It empowers developers and data scientists with experiences for all skill levels, from a no-code drag-and-drop interface (Azure ML Designer) to code-first experiences with best-in-class support for open-source frameworks and languages.

Azure Machine Learning helps data scientists accelerate model development with automated ML, which automatically creates models in a few steps. But this doesn't mean it's a black box—it includes model interpretability that helps users evaluate and understand why a particular model was recommended. Users also get access to industry-leading MLOps capabilities, or DevOps for machine learning, which help accelerate and scale the ML lifecycle and make it easier for data scientists, developers, and IT teams to collaborate and stay on the same page.

O2, one of the world's best-known telecomms brands, wanted to use Azure Machine Learning for their new auto insurance service.

O2 Drive uses Azure Machine Learning to analyze telemetry data gathered from an app on drivers' phones to more accurately assess risk and determine a fair priced insurance premium. For those that opt-in, driver data is then further leveraged through Azure to run 'safety driver campaigns' that reward good drivers with monthly perks and competitions.

Knowledge mining

Businesses collect a staggering amount of data every day, largely in unstructured formats like PDFs, images, videos, audio files, and Office files. Using Azure Cognitive Search, developers can ingest disparate structured and unstructured content then use AI services to uncover insights. In addition to built-in AI capabilities, developers have the flexibility to integrate their own custom models to identify information specific to their business, like legal clauses, industrial parts, or pharmaceutical terms. The AI output can then be used for a number of end-user applications like search, business applications, or analytics. Ultimately, Azure Cognitive Search helps stakeholders find essential needles in haystacks of files, make better-informed decisions, identify risks and opportunities, and much more.

Adding intelligent experiences to apps

Used by over 1 million developers, Azure Cognitive Services make it easy to build intelligence into apps. Cognitive Services include over 25 pre-built AI models in categories like vision, speech, language, search, and decision. Without machine learning expertise, developers can deploy AI for various use cases using familiar programming languages. All it takes is an API call to give an app the ability to communicate with users in natural language, identify content in images, detect anomalies, translate speech or text, and much more.

Progressive wanted to interact with their customers more on mobile channels. To accomplish this, Progressive used Microsoft Azure Bot Service and Cognitive Services to quickly and easily build the Flo Chatbot which answers customer questions, provides quotes, and even offers a bit of witty banter in the well-known style of the company spokesperson, Flo.

One of the most common use cases for AI in the enterprise is chatbots or virtual agents. These solutions can provide customers with on-demand, personalized service across channels or help employees find information more quickly. With Azure Bot Service, developers can create anything from a simple Q&A bot to a branded virtual assistants for sophisticated scenarios.

AI for subject matter experts

One of the most transformational opportunities for organizations is to empower subject matter experts with tools and applications that help them apply **AI for reasoning**. These employees are tasked with solving some of the most complex and highly cognitive problems, and AI can help.

As you have seen, there are a wide variety of AI models available today. However, most workers can only use AI models that have been embedded into applications for a specific purpose. In complex fields that require deep expertise, employees need the flexibility to pivot their approach if they have a new idea or new evidence to work with. Telling a developer or data scientist what they need ahead of time would be at best impractical and more likely impossible. But real transformation happens when everyone can use a wide range of AI models to reason over complex information. This means they can freely choose which AI models to use for different purposes and what information sources to analyze with them.

AI for reasoning is exactly that. It is highly valuable for subject matter experts who have business-critical expertise, such as researchers, operations managers, field technicians, marketers, business developers, and more. With powerful AI applications, they can apply their knowledge more efficiently and effectively, speed up learning cycle iterations, and deliver real business impact at a rate never before possible.

Today we are working with many partners and customers to make this a reality.

NOVARTIS

Novartis

One amazing example of how companies are empowering every employee with AI for reasoning is the Swiss pharmaceutical company Novartis. They are truly bringing the power of AI to the desktop of every employee—not just data scientists and developers—to transform how medicines are discovered, manufactured, and commercialized.

To make this happen, they have taken a holistic approach, redefining every business function with AI—from research to manufacturing to distribution. Novartis has over 50 thousand employees, and most of them deal with a huge amount of information, like medical journal articles, chemical representations, gene sequences, and clinical trial results.

By leveraging AI for reasoning, Novartis has enabled its researchers to freely choose which AI models to employ for different purposes and what information sources to analyze with them. Researchers can also capture and share their reasoning with peers in an explainable, collaborative, and replicable way. In this new paradigm, users can leverage AI more easily to follow ad hoc lines of thought, confirm hypotheses, highlight contradictions and anomalies, and enrich and organize information.

With this new ability to co-reason with AI and colleagues, employees can quickly make sense of and derive key insights from this vast amount of unstructured information to take on the next wave of challenges in medicine. Not only are the individual employees able to transform their daily work in powerful ways but whole teams can collaborate, share, and explain their reasoning with others in the company so steps and learnings can be shared, replicated, and improved upon.

MACKMYRA

Mackmyra Whisky

Another great example of how customers are making this real today is with the Swedish-based company Mackmyra Whisky. Mackmyra has found a way to combine 1,000-year-old techniques and human expertise with AI to take product quality to the next level.

Mackmyra has partnered with Finnish tech company Fourkind and Microsoft to deliver an AI solution for the world's first whisky developed with AI.

Using existing recipes, sales data, and customer preferences, Mackmyra's AI models, built using Azure ML, have generated more than 70 million recipes. The models predict the combinations, production details, flavor notes, and overall product outcomes that will be popular and of the highest quality based on what kind of cask types there are in the warehouse.

Thanks to the algorithm's ability to sift through and calculate a vast amount of data quickly, new and innovative combinations that would otherwise never have been considered can be found.

> *"We always strive to challenge the traditions in the very traditional whisky trade, and that's something we can really do now with the help of AI. We see AI as a part of our digital development, and it is really exciting to let AI be a complement to the craft of producing a high-quality whisky. For me as a Master Blender, it is a great achievement to be able to say that I'm now also a mentor for the first ever AI-created whisky in the world."*
>
> **— Angela D'Orazio**
> Master Blender at Mackmyra

The beauty of the solution is fully realized when these insights and recommendations are put in the hands of the Master Blender. Master Blenders evaluate, test, and refine the AI recommendations based on their expertise and deep knowledge of the craft. With the power of AI, they can innovate at a pace and with a level of detail that was previously unattainable.

It is important to stress that these AI scenarios are designed to enhance human expertise, not replace it. With AI for reasoning, users can refine their craft, amplify their insights, increase efficiency, and deliver transformational impact to the business.

Mondelez International

Building on the success at Mackmyra, Fourkind is partnering with Mondelez International to create the same transformation in the snack industry. If you are not familiar with Mondelez, it is one of the world's largest snack companies, famous for popular brands like Oreo, Sour Patch Kids, Trident gum, Toblerone, Cadbury, and many more. Mondelez is always looking for innovative ways to bring the next great snack to market.

Using AI, they will now be able to provide insights and recommendations to their master tastemakers to improve snack quality, discover new taste experiences, and delight our taste buds in new ways!

We are beyond excited to see what is possible as more customers engage in this truly revolutionary and transformational approach to AI. By putting the right AI tools in the hands of subject matter experts, they can do what they do best and deliver real business value today.

AI for business users

Finally, to scale and truly realize the transformational opportunity of AI, we must put AI in the hands of every business user. AI has the capacity to empower all people to achieve more, not just developers and data scientists or researchers and subject matter experts. In fact, last year, Gartner predicted that "in 2021, artificial intelligence (AI augmentation will create $2.9 trillion of business value and 6.2 billion hours of worker productivity globally," (Gartner, 2019). Most of this enormous value will come from non-technical business users working with AI. On top of that, in a recent survey of over 10,000 employers and employees, we discovered that employees of companies that have integrated AI throughout found more meaning in their jobs and want to use AI more (KRC Research, 2020).

AI provides business users and subject matter experts with limitless opportunities to get more done and do things that weren't possible before. For instance, AI can help employees uncover hidden insights, find critical information in overwhelming amounts of data, improve collaboration, and automate repetitive tasks.

Our goal is to make AI easily accessible to all business users. With the right tools, we believe we can help business users complement their expertise with AI-powered insights, making them more innovative and effective. To accomplish this, we are weaving intelligence into business applications that people use every day. We are also working to democratize AI development with no-code tools and platforms that enable business users to create their own AI models, helping turn their visions into reality.

Everyday AI

From virtual communication to overwhelming amounts of information, there are some realities every employee must address to thrive in a modern workplace. To help employees succeed, we are putting AI to work in Microsoft 365 apps that people use every day—like Microsoft Teams, Outlook, and Office. With intelligent productivity experiences in Microsoft 365, employees can collaborate and conduct meetings more effectively, focus their time on value-added work, and uncover timely insights to improve their work.

Virtual meetings are becoming more and more critical. While there's no true replacement for in-person collaboration, we're working harder than ever to decrease pain points, increase human connection, and make virtual work more engaging with Microsoft Teams. Intelligent experiences like background blur and custom backgrounds can help meeting participants minimize the chances of disturbances appearing on their screen. Live captions help improve accessibility for meeting participants who are hard of hearing or have hearing loss, non-native English speakers, or even for those with a sleeping baby nearby. Business users can also leverage real-time noise suppression to reduce distractions such as loud typing or a barking dog.

Whether working remotely or in a physical workplace, AI can also help employees focus their time and attention on what matters most. For instance, the Briefing email from Cortana aggregates important information about upcoming meetings and outstanding tasks in Outlook and enables employees to set aside daily "focus time" to work uninterrupted with Microsoft Teams notifications silenced. With Play My Emails in Outlook mobile, employees can use natural language to ask Cortana to read out their new emails and share any changes to their schedule—so they can catch up even when their hands are busy with other things.

Microsoft Research breakthroughs in image and speech recognition, machine reading comprehension, and language understanding have also enabled us to transform personal productivity with familiar Office apps like PowerPoint, Word, and Excel. To help prepare more engaging presentations, users can take advantage of intelligent suggestions for slide designs in PowerPoint. They can even rehearse the presentation and receive real-time feedback to improve pacing and limit filler words or culturally insensitive phrases. With Editor, writers can take advantage of intelligent suggestions in Word to not only correct spelling and grammar but also rephrase entire sentences for more impact or clarity. Writers can also get intelligent suggestions for spelling out acronyms, putting numbers in real-world perspective, citing reference material, and even flagging potentially unoriginal language. With natural language queries in Excel, users can ask a plain language question of their data to get answers.

During the past four decades, the Cerner Corporation has helped its healthcare customers better understand their data so they can improve patient care, reduce costs, and increase operational efficiency. As part of its 2020 vision, Cerner wanted to create an intelligent work environment where their associates take advantage of AI to work smarter. To accomplish this, they choose Microsoft 365.

"We were looking for borderless mobility, an intelligent work experience infused with AI. And we wanted that work to happen in an environment with tight security from the start. Microsoft 365 delivers on all counts."

— Bill Graff

Chief Information Officer,
Cerner Corporation

As the world's information grows by around 60% every year, staying up to date and making sense of it all can be increasingly overwhelming (IDC, 2018). Yet harnessing information has become the key to almost everything—from improving productivity to understanding customers and much more. That's why our Microsoft 365 experiences come with Microsoft Search embedded, helping business users wade through this data to uncover more impactful insights and make better data-driven decisions. Microsoft Search enables users to search for people, files, sites, and more across their organizational data and public web data—all from within the Microsoft 365 products they're already working in. Results are even personalized to each user to ensure relevance.

And this is just the tip of the iceberg. To learn more about AI capabilities in Microsoft 365, click here.

Core process optimization

For horizontal functions like sales, marketing, customer service, and finance, organizations across industries can use AI to proactively solve problems and gain insight to drive meaningful actions. The first step is often with software-as-a-service (SaaS) AI solutions, which deliver results quickly and cost-effectively.

We are making this possible by infusing AI into our Dynamics 365 offerings as a core ingredient to enhance, not replace, the capabilities of business users. Enterprises from every industry already use Dynamics 365 to help them run their entire business. With powerful intelligence in their existing workflows, organizations can empower their business users to be more proactive and effective. Dynamics 365 enables users to bring together relationships, processes, and data across applications to gain increased visibility and control so they can do their best work.

Explore a few of our Dynamics 365 AI applications:

Dynamics 365 Customer Insights increases confidence with a single view of customers to optimize engagements and discover insights that drive personalized experiences.

Dynamics 365 Sales Insights goes beyond pure automation to enable users to sell smarter with embedded insights within workflows.

With **Dynamics 365 Customer Service Insights** users gain insights to proactively address increasing volumes and manage efficient agent distribution.

Dynamics 365 Fraud Protection helps merchants decrease fraud costs, protect revenue, and improve the online shopping experience for customers.

Learn more about **Dynamics AI 365.**

To explore more of our Dynamics 365 AI offerings, visit the Microsoft Dynamics 365 AI webpage. To learn how we've transformed our own internal Microsoft processes with AI, see the e-book Empowering employees with AI: A look into how Microsoft uses AI to do business.

Build AI without code in Power Platform

Of course, business users may need AI capabilities beyond the out-of-the-box AI experiences baked into Microsoft products. In some cases, they may have access to AI solutions created by data scientists and developers within their organization. But we want to go beyond that as well.

We want to give everyone the ability to add AI capabilities to their apps and automate their workflows, regardless of technical experience. For this reason, we're working to democratize AI development with no-code tools and platforms that enable anyone to create and use AI models.

For example, we've created a new Power Platform capability called AI Builder. Without writing a single line of code, business users can train, publish, and run AI models using customizable templates and a guided process in AI Builder. They can also use pre-built models from Cognitive Services for common scenarios.

Business users can leverage a wide range of customizable templates for training their own AI models, including:

- **Form Processing** identifies the structure of your documents based on examples you provide to extract text from any matching form.
- **Object Detection** lets you count, locate, and identify selected objects within any image. You can use this model in PowerApps to extract information from pictures you take with the camera.
- **Prediction** identifies patterns in historical data and then detects learned patterns in new data to predict future outcomes.

Business users can also take advantage of a range of pre-built AI models that require no training or customization. These prebuilt AI models include:

- **Business Card Reader** models allow for the extraction of information from business card images such as name, job title, address, email, company, and phone numbers
- **Sentiment analysis** models detect positive or negative sentiment in text data and provide an overall sentiment score for each text data
- **Text recognition** models extract words from digital, printed, and even handwritten documents and images into machine-readable character streams

> *"The G&J Pepsi IT team uses AI Builder and Power Apps to create the next generation of our Store Audit App, enabling better mobility and efficiency for our field personnel. AI Builder will help build an AI model to automatically identify and track our products using object detection. For our field worker, it will be as simple as taking a photo and letting AI Builder do the rest."*
>
> **— Eric McKinney**
> Enterprise Business Systems Manager, G&J Pepsi

The AI models from AI Builder can then be used with Power Automate to automate processes or Power Apps to enhance the intelligence of existing business apps.

With democratized development platforms like AI Builder, those who best understand the business problems can create the right AI solutions to solve them.

To learn more, please visit the AI Builder and Power Platform product pages.

Get started today

It's clear, now is the time to put AI in action. Empowered with our tools, every organization has the potential to amplify human ingenuity across every role and gain industry-changing competitive advantages.

Taking the next step in AI means thinking big about how AI can have the greatest impact. Microsoft is ready to become a strategic partner for our customers and help them bring AI to every process and employee in their organization.

As you develop your organization's AI approach, we encourage you to visit our AI Business School. This free, on-demand master class series is designed specifically for business leaders to empower you to be successful and get results from AI. It covers the full AI spectrum, from exploring how AI is transforming specific industries like retail and healthcare, to illuminating the technologies like deep learning that make this possible. Taken together, the modules of the AI Business School will enable you to learn and share the knowledge you need to transform your organization with AI.

AI Business School Learning Paths:

1. Define an AI strategy
2. Enable an AI-ready culture
3. Responsible AI
4. AI technology for business leaders
5. Bring AI to business users
6. Scale AI in your organization
7. Industry-specific learning paths

Additional resources

Additional resources for everyone

Learn more about our approach to AI and our intelligent products and services

- Microsoft AI homepage – Learn how Microsoft AI brings people and organizations together, find cutting-edge examples of Microsoft AI in action, and see how you can leverage Microsoft AI in your organization
- Microsoft AI for business – Get your business AI-ready with tools and resources to help you strategically apply AI within your organization
- Azure AI platform – Learn more about how the Microsoft AI platform can help you develop AI solutions in conversational AI, machine learning, data sciences, robotics, IoT, and more
- Intelligent applications – Experience the intelligence built into Microsoft products and services you use every day like Microsoft 365 and Dynamics 365
- Microsoft 365 AI - Learn more about the AI capabilities embedded in our Microsoft 365 products.
- Dynamics 365 AI – Explore our Dynamics 365 AI offerings and see how we are enabling the people closest to business challenges to resolve them
- Power Platform and AI Builder – Learn more about how you can enhance your apps and business processes with AI that's easy to build and configure within Power Apps
- Autonomous systems – Learn about a new class of systems that can automate and simplify everyday processes
- AI for Good – Learn more about our five AI for Good programs: AI for Earth, AI for Health, AI for Accessibility, AI for Humanitarian Action, AI for Cultural Heritage
- Microsoft AI blog – Hear about the latest Microsoft breakthroughs in AI technology

Find guidance to help ensure your organization develops and uses AI responsibly

- Responsible AI homepage – Learn more about our approach to ensuring AI is developed and used responsibly
- Responsible AI in business learning path – Receive guidance on how to set up principles and a governance model in your organization, as well resources, best practices, and tools

Additional resources for business leaders

Learn how to best integrate AI in your organization

- AI readiness assessment tool – Take a brief online assessment to find out how ready your organization is for AI and gain recommendations for moving forward
- Insights tool – Use our interactive data-rich assessment tool to learn how AI is providing a competitive edge for businesses like yours

- AI Business School – Get insights and practice guidance from top executives on how to strategically apply AI in your organization
- Microsoft AI Transformation Customers Stories – Explore real-life examples of how AI is impacting organizations of all sizes across industries

Additional resources for developers and data scientists

Expand your knowledge of AI concepts and development techniques

- AI Labs – Learn and code real-world AI while testing experimental apps
- AI Demos – Experiment with interactive demos that bring Microsoft AI technology to life
- AI School – Build confidence in developing AI through educational courses and tutorials
- MS Professional program – Gain job-ready skills with hands-on labs and expert instructors
- Microsoft Learning Partners – Sharpen your technical skills with in-depth training solutions that combine video, hand-on labs, and Microsoft Certification preparation

Take advantage of available AI tools and techniques

- Visual Studio Tools for AI – Build, test, and deploy deep learning solutions in an integrated development environment
- ML.NET – Create custom ML models and integrate them easily into .NET applications
- Data Science VMs – Save time with pre-configured cloud environments for data science modeling, development, and deployment
- Responsible AI resources – Access important research projects, open-source software, managed services, and other tools to better understand, protect, and control AI systems

Experiment with groundbreaking AI technology

- Cognitive Research Technologies – Get an early look at emerging cognitive capabilities through APIs and SDKs and provide feedback to influence development

Collaborate with other developers and the open-source community

- GitHub – Leverage the tools and frameworks you already use and exploit the full power of the open-source community
- Azure Open Datasets – Utilize curated public datasets to add scenario-specific features to machine earning solutions
- Azure AI Gallery – Discover, share, and collaborate with other developers

Microsoft AI