



Everyday AI in Microsoft 365



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Empowering people and organizations with AI

Artificial intelligence (AI) is transforming the way people and organizations work. As knowledge workers begin to widely adopt AI, they can expect to be more informed with greater insights into the activities going on around them, more focused on productive tasks, more creative using design and writing assistance, and happier by not getting bogged down in repetitive tasks.ⁱ A study by PwC estimated that global GDP will increase 14 percent by 2030 as businesses adopt AI, contributing an additional \$15.7T to the global economy.ⁱⁱ

A Forrester Consulting study commissioned by Microsoft found that AI can help knowledge workers make better business decisions by using graph-based discoveries. Typically, knowledge workers spend their days working in information: searching for it, analyzing it, and developing insights to create content that informs major business decisions. By analyzing and contextualizing data, AI helps knowledge workers find the information they need to make decisions faster, locate relevant experts more easily, and make decisions more confidently. Furthermore, decision makers surveyed in the study noted the potential for knowledge workers to benefit from streamlined business processes and increased business agility through proactive suggestions, and reduced burnout and improved customer focus through the automatic completion of tasks.ⁱⁱⁱ

Reinforcing this optimistic view of AI value, the Economist Intelligence Unit found executives across the globe expect AI to have a positive impact on growth (90%) and productivity (86%) in the next five years.^{iv} In the same study, *The Economist* team identified the top strategic challenges facing organizations today, which include cybersecurity, economic uncertainty, new customer acquisition, IT modernization, and reputation and brand management. These challenges have something in common: they cannot be addressed solely with computing power. Instead, they require the ability to reason across a wide variety of inputs and determine a specific outcome; they require the intelligence and judgement of knowledge workers. We believe intelligent technologies such as Microsoft 365 can amplify human ingenuity and assist in solving these challenges.

As we explore how, where, and why AI powers Microsoft 365, let's first consider the Microsoft mission statement: to empower every person and every organization on the planet to achieve more. We believe that by putting AI in the hands of knowledge workers with Microsoft 365, organizations can transform how their employees work. With capabilities

Microsoft Mission
**To empower every person
and every organization on
the planet to achieve more.**

that are broad, deep, and accessible to everyone, AI-infused Microsoft 365 can help amplify employee skills, foster teamwork, uncover hidden insights to improve decisions, and proactively manage threats to protect business and personal data. These benefits do more than just extend an organization's capabilities and drive unique value; they create opportunities for every person and every organization to achieve more.

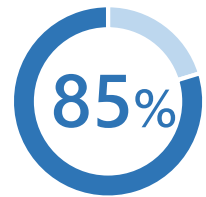
Consider the following example of how the intelligent technologies powering Microsoft 365 can benefit a typical team:

A product team spent three weeks preparing a presentation to get the board's approval for a new initiative. The presentation contains many charts and other insights to help the board make a decision. It was put together by professional designers for maximum impact.

The day before the board meeting, the team receives feedback from executives that the location and scope of the initiative has changed. The team has only one day to create a new presentation.

They must revise the financial analysis, create new charts, update the presentation with information about the project's new location, and rewrite the conclusions. With no time to spare, they leverage AI in Microsoft 365 to help them quickly create the new presentation:

- The team lead cannot waste time emailing back and forth to schedule follow-up meetings. Instead, intelligent technology in Outlook can help employees find the best room for a meeting based on attendees, time, availability, and other preferences.
- As the team updates the spreadsheets, Ideas in Excel analyzes the data and provides several suggestions for charts to present the data most effectively, so the team doesn't have to ask for additional help from the data analysts who built the original spreadsheet.
- Instead of researching the new proposed location themselves, the team asks PowerPoint to do the research for them. QuickStarter finds relevant information on the internet and turns it into a slide that the team can edit and update as needed.
- The team takes advantage of Ideas in PowerPoint to get professional layouts with relevant pictures and icons for the new presentation content.
- Working under pressure, the team doesn't have time to think about getting every word right or proof every slide, but they can't risk awkward phrasing and typos in the presentation. Fortunately, Editor in Office autocorrects spelling mistakes as they happen, analyzes grammar, and offers suggestions to make the content better. With help improving their writing throughout



Of enterprise businesses will be using AI by 2020

IDC "IDC Predictions Provide a Blueprint and Building Blocks for Becoming a Digital Enterprise" October 2017.

the process, the team can skip extra copy editing and save valuable time.

- When everything is revised, a few critical team members are unable to join the final review in person, so the group settles on hosting a videoconference using Microsoft Teams. Background blur in Teams uses facial recognition to automatically blur the background to decrease distractions happening behind those attendees working from home.
- The team records the meeting, which automatically uploads to Microsoft Stream, to capture the required updates. Using the searchable, timecoded transcript, they can easily find action items and complete the deck just in time for the board meeting. Crisis averted with the assistance of AI in Microsoft 365.

The AI features built into Microsoft 365 can help employees be more creative and efficient every day, not just in a crisis. Microsoft has integrated AI capabilities into the tools employees use daily. This everyday AI enhances creativity and improves efficiency—oftentimes without employees even being aware they are using it.

The realities of modern work

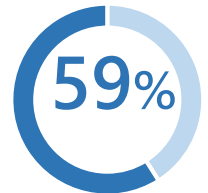
While every company has a unique culture, we see some common trends affecting today's broader work culture and shaping demands on employees and organizations. Most organizations find it challenging to provide their workers with the tools they need to be successful and address the realities of the modern workplace.



Increasing time demands

Companies are asking knowledge workers to collaborate on more projects and participate on more teams than ever before. In fact, the number of teams that people work on has doubled in the past few years, and the average knowledge worker spends 50 percent more time collaborating.

These teams are often diverse and can span geographies, roles, organizations, abilities, and age—making effective communication and efficient collaboration difficult. Working on multiple teams also means more interruptions, more meetings, and more email. The issues caused by being constantly bombarded are compounded by the fact that the average worker takes 23 minutes to get back on track after answering an email.^v Adding to employee time demands are seemingly endless meetings, which employees feel are unproductive 44 percent of the time^{vi}. These demands make focusing on the work they need to do a constant challenge.



of knowledge workers struggle to find the sources of information they need.

Forrester Consulting study commissioned by Microsoft, "Extending the Value of AI to Knowledge Workers" February 2019.



Overwhelming amounts data

Organizations now have more data than ever about their customers, products, and operations. However, less than 0.5 percent of digital data is ever analyzed or used to enhance business performance.^{vii} A recent study by Forrester Consulting commissioned by Microsoft found that 59 percent of knowledge workers struggle to find the information sources they need, and 63 percent lack confidence in making optimal decisions based on the insights available to them.^{viii}

Finding ways to quickly turn information into insights and meaningful actions can be daunting. Yet, doing so has become increasingly important to business success—from improving productivity and driving innovation, to understanding customers, or selecting new markets.

Enterprise leaders are aware of the problem, with only 14 percent believing that their company is using AI to successfully turn data into insights.^{ix} Harnessing data that is otherwise going underutilized represents tremendous potential for companies. In healthcare, for example, better integration of big data could save organizations as much as \$300 billion a year.^x And, retailers leveraging the full power of big data could increase their operating margins by as much as 60 percent.^{xi}



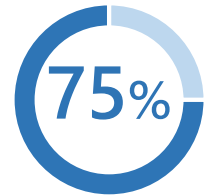
Growing security threats in a flexible workplace

Organizations now have five generations working together at the same time. Having such a diverse set of age groups in the same workforce can create challenges as businesses balance traditional workflows with the desire to adopt new technology.

By 2025, Millennials will constitute 75 percent of the global workforce.^{xii} Soon, Millennials and Gen Z employees will largely set expectations for how businesses operate. These workers are looking for increased flexibility from employers about where and when they work. They also see mobile devices and social media as their primary way to communicate and expect to be able to use them for work.

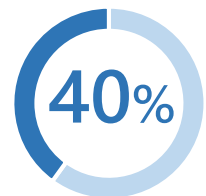
These demands for a flexible workplace change an organization's security risks dramatically. On one side, employees require the open flow of information to drive productivity and teamwork. But on the other, organizations must find new ways protect their intellectual property against complex threats that use advanced social engineering, and target everyone connected to the business.

This is the environment where modern work happens. The reality of modern work is challenging, but it also presents a huge opportunity for



of workforce will work outside of their office for at least part of their workday by 2020

IDC, "U.S. Mobile Worker Forecast, 2015-2020," May 2015



reduction in productivity caused by context switching

American Psychological Association, "Multitasking: Switching costs" 2006.

organizations to adopt AI to address these challenges and outperform their competitors.

How can AI help your organization?

Gartner estimates that in 2021, AI augmentation will generate \$2.9 trillion in business value and recover 6.2 billion hours of worker productivity.^{xiii} According to a study by *Forbes Insights*, 72 percent of executives believe AI and related technologies will have a transformational impact on their company, and 80 percent of executives agree that AI is already having a transformational impact on workflows and tools for knowledge workers.^{xiv} However, executives often don't know how or where to start implementing AI within their own organizations and fear they are at risk of falling behind.

With intelligent, AI-powered solutions in Microsoft 365 right at their fingertips, knowledge workers can create more value for their organization.

Defining AI

AI can mean a lot of things to different people. In this paper, AI represents a broad range of technologies that can perceive, learn, reason, assist in decision-making, and act to help solve problems. AI technology continually learns from user interactions and organizational data to provide better insights. These technologies can interpret the meaning of data from text, voice, and images, identify trends, and form conclusions from imperfect datasets to assist in decision-making. These capabilities represent a huge shift in technology: before we needed to learn how to use technology, but now, technology is learning from us.

Microsoft uses an interconnected dataset of world knowledge, organizational knowledge, and individual knowledge, called the Microsoft Graph, as the foundation for its AI capabilities in Microsoft 365. The graph spans the world around us, our business applications, and individual user data to surface valuable insights and experiences to our customers. Comprised of signals across Bing, Office 365, Windows, and many other sources, the graph enables ground-breaking possibilities for customers.

Having one of the largest graphs ever created of human activity while at work provides a huge advantage in creating powerful AI benefits for Microsoft 365 customers. We can train our AI models using the huge volume of interactions that occur in Microsoft 365—420 billion per month in Office alone—and achieve rapid improvements.



A complete, intelligent solution that empowers everyone to be creative and work together, securely.

- **Unlocks creativity**
- **Built for teamwork**
- **Integrated for simplicity**
- **Intelligent security and compliance**

"We want to pursue democratizing AI just like we pursued information at your fingertips."

Satya Nadella
Microsoft CEO

Bringing AI to every employee with Microsoft 365

To democratize AI for your employees, we are infusing intelligence throughout Microsoft 365. Employees can leverage AI in existing workflows to amplify the skills of individuals and teams, uncover hidden insights, and actively monitor and secure the organization against modern threats and the risks caused by the proliferation of devices and workplace flexibility.

Amplify skills and foster teamwork

AI technology is providing a once-in-a-generation opportunity for Microsoft to deliver new, transformational value to organizations. These capabilities can help employees focus on their strengths to further amplify their skills and enhance their work as both individuals and team members.

Machine translation is one area where AI provides many capabilities that can amplify an employee's skills. Using Microsoft Teams, employees can communicate with colleagues who speak different languages by providing real-time translation of chat messages. With meeting recording capabilities in Teams, invitees who miss a meeting can watch it on demand using Microsoft Stream. They can also search across audio to find action items and catch up with work quickly and easily.

PowerPoint also helps a speaker to connect with a diverse audience by providing on-screen subtitles in the spoken language or one of 60+ translated languages—while a presentation is being delivered live. And, within Word and PowerPoint, employees can choose to have content translated with the click of a button.

As helpful as these capabilities can be, employees cannot always find them easily, or they may not be aware they exist. To solve this issue, Microsoft surfaces key AI capabilities in Office apps in one place via Ideas, which provides suggestions to make employees more productive without leaving the flow of their work or even being aware of the feature they are using.

In PowerPoint, Ideas automates the creation of slides and presentations, helping everyone get more out of Office. With a cloud-powered recommendation engine and smart animation technology, anyone can create polished slides and captivating motion effects with just a few quick steps. Employees can spend less time figuring out how to produce high quality designs and more time preparing for their presentation.

Another proactive AI capability, Editor in PowerPoint, Word, and Outlook assists employees as they put the finishing touches on their files by providing an advanced proofing and editing service. Behind the scenes,

"We welcome such positive advances in technology, like **live captions and subtitles in PowerPoint**, that allow everyone, and notably those with disabilities, to better communicate ideas. They help break down barriers and lead to greater inclusiveness to the benefit of individuals and society as a whole."

Yazmine Laroche, Deputy Minister responsible for Public Service Accessibility
Government of Canada

Canada 



Editor identifies spelling, grammar, and writing style issues by leveraging machine learning and natural language processing mixed with input from Microsoft's own team of linguists. The Editor pane then makes suggestions to help employees improve their writing.

Outlook also has many AI capabilities to amplify employee skills. Focused Inbox helps filter out the noise and surface the most relevant information, so they don't miss what's important. Employees can also use suggested replies when they need to respond with a short message. Intelligent technology in Outlook can also help employees find the best room for a meeting based on attendees, time, availability, and their own preferences.

In Windows 10, Microsoft's intelligent assistant Cortana helps users achieve more while doing less. Cortana helps employees see what the day has in store, when and where meetings are, how long it will take to get to work, or even get updates from the calendar for upcoming trips. Cortana gets even better when connected to Office 365. Through Office 365, Cortana can pull together insights to help employees be more prepared—like seeing how colleagues are connected to each other, and what documents are being shared between them.

And your employees can begin using these capabilities today. Many other organizations already are. In fact, more than 1 billion slides have already been designed with Design Ideas in PowerPoint. Hundreds of millions of interactions—aggregated, anonymous signals from Office users—are training machine learning models to provide better and better results over time.

Uncover hidden insights and improve decisions

Today, knowledge workers are mired in an unprecedented volume of data. This information overload can be costly because employees are too overwhelmed to innovate or make decisions quickly. To uncover trends hidden in data, analyze data effectively, and improve their productivity, employees need better, more intelligent tools. Microsoft 365 provides several capabilities to improve data analysis to drive better decisions and manage information overload.

Finding insights by turning Excel data into pivot tables or charts used to be out of reach for many employees. Now, Ideas in Excel delivers AI-powered insights to help people take advantage of the full power of Office. Ideas helps identify trends, patterns, and outliers in a data set and provides suggestions on the best charts to present the insights—helping employees analyze and display their data in seconds and enabling better, faster decisions.

Power BI has long been a pioneer in applying AI through capabilities such as natural language search, which enables employees to get answers by asking questions in plain English, or Quick Insights, which automatically finds patterns in data. By harnessing the power of AI, employees can perform complex tasks that typically require technical know-how—key phrase extraction, sentiment analysis, understanding drivers, creating machine learning models—with just a few clicks and without code. For example, sophisticated, pre-trained machine learning models incorporated into Power BI provide employees with powerful ways to extract information from sources like documents, images, and even social media feeds.

Workplace Analytics identifies how employees across an organization spend their time and provides insights into how groups collaborate. Dashboards highlight potential problem areas, while custom queries offer flexible data access to create valuable insights. By quantifying Office 365 collaboration data, Workplace Analytics gives business decision-makers a powerful tool for evidence-based cultural transformation.

Similarly, MyAnalytics uses data analysis to help employees improve productivity and teamwork. Improving personal productivity requires making better decisions about how to use personal time, but that can be difficult without data. MyAnalytics gives employees insight into two key factors governing productivity: how they spend their time and who they spend it with. With insights into meetings, key relationships, email effectiveness, and focus time, employees can choose to work on more meaningful tasks and produce more value for the organization.

Search has been around for nearly as long as computers have. But today, with the help of AI, search does much more than help employees find a file. Microsoft Search is a cohesive search capability across the Office apps, Windows, Edge, and Bing that learns from past actions to provide results spanning apps, files, settings, and people in the context of an individual's current work. With the power of zero-entry queries, many times employees won't even have to begin typing; Microsoft 365 will present the desired result just based on recent activities.

And search isn't just for text anymore. Microsoft 365 can determine where photos were taken, recognize objects, and extract text in photos.

"My favorite feature [of **MyAnalytics**] is the recommendation to book that focus time. Everybody has their own way of going through the day and making sure they're prioritizing their time."

Stephen Byrd, Director,
Technology Integration and
Development

NASCAR



This object recognition and text extraction helps make searching for images as easy as searching for documents. Microsoft 365 also facilitates searching audio and video files. For example, in Microsoft Stream, employees can use facial recognition to jump to a point in a video where a specific person is speaking or jump to a point where a specific name is mentioned.

Proactively secure your data and devices

Securing your organization grows more challenging every day. Data is proliferating at unprecedented rates and becoming more valuable, threats are becoming more sophisticated, and flexible workstyles increase security risks. AI technology in Microsoft 365 is here to help protect your data and devices.

Microsoft AI-enhanced security begins with the Microsoft Intelligent Security Graph. This is the name we use to describe how we synthesize security data across a huge variety of sources. We operate 200-plus global cloud, consumer, and commercial services, and the Microsoft Intelligent Security Graph includes data captured from products and services including outlook.com to Xbox Live to Office 365 to Azure, LinkedIn, and Bing. All told, the Intelligent Security Graph processes 6.5 trillion signals per day. Here are a few statistics:

- 400 billion emails get analyzed by the Outlook.com and Office 365 email services every month;
- 1.2 billion devices get scanned every month by Windows Defender;
- 450 billion monthly authentications on Azure Active Directory and Microsoft Account;
- Bing scans about 18 billion web pages every month.

The breadth of these services means we also defend a tremendous amount of surface area. In fact, Enterprise Security from Microsoft is employed by 90 percent of the Fortune 500. On any given day, we probably see more attacks than any other company—currently about five billion threats per month. We get a lot of information from defending against those attacks and helping to protect access to our services.

We also layer shared threat data into the Intelligent Security Graph, including information from our partners, from Microsoft researchers on our 3,500-plus-person full-time security team, as well as from law enforcement agencies we partner with and botnet data we collect through our Digital Crimes Unit.

The Threat Intelligence service uses data in the Intelligent Security Graph to provide recommendations for security settings based on the current threat environment. This intelligence is continuously applied across

“With **ATP**, we’re better protected against zero-day malware attacks, because associates can only access links and email attachments that have been identified as not malicious.”

Dennis Giles, Director of Unified Communications
Advocate Health Care





Microsoft services like Microsoft 365, without any need for customer configuration or action.

To help security teams understand and monitor their security posture, Secure Score uses the power of the cloud to evaluate identity services, data, devices, apps, and infrastructure to provide a measurement of security across those areas. At any time, a customized, dynamic list of clear, actionable recommendations can be generated to help improve an organization's security.

These tools are great for defense, but with five billion attacks detected every single month, organizations must still optimize security protection through a combination of human security admins and AI to back them up. Microsoft Threat Protection is always running in the background of Microsoft 365. It uses data from Microsoft services around the globe to analyze an environment for attacks. Using AI technology to learn about attacks and remediation, Threat Protection can often remediate a successful attack without employees ever knowing that something happened. When they need to act, Threat Protection will use information from the Intelligent Security Graph to guide system administrators through the recommended remediation steps to quickly defuse the threat.

Why Microsoft AI?

Microsoft is investing heavily in AI research. Our computer scientists have been working on AI and machine learning technologies for decades. Today, we have more than 1,000 researchers across 11 labs focused on over 55 areas of computing and collaborating with leading academic, government, and industry researchers.

Data to unlock intelligence

AI requires data to work, and the Microsoft Graph is one of the largest datasets of human activity at work ever created. It pulls data from:

- 2.5B entities in Bing
- 800M Windows 10 devices
- 500M LinkedIn members

- 180M monthly active commercial Office 365 users

The Microsoft Graph connects these data points into a collection we can draw patterns across, using the knowledge gained from one point of data to influence how we interpret another. For instance, Bing is used to provide stock information for Excel data types, Windows Defender provides insights into the location of virus attacks, LinkedIn provides formatting information for resume builder in Word, and Office 365 user interactions are used to train Editor to make better style suggestions. The scale that Microsoft can attain enables us to generate relevant insights about everything from security to workplace productivity to help organizations optimize the way they manage their business.

The power of Azure

Azure brings software and hardware together to build a cloud that is optimized for AI. The massive compute power available in the cloud makes storing and processing the huge amounts of data required for Microsoft 365 and the Microsoft graph possible.

Breakthrough advancements

With a strong focus on innovation, Microsoft is constantly pushing the boundaries of AI to create fast, agile, and powerful tools for the enterprise. Built on top of Azure, our AI capabilities are reaching new milestones every year:

[2015: Image recognition human parity](#)

[2017: Speech recognition human parity](#)

[2018: Machine reading comprehension human parity](#)

[2018: Machine translation human parity](#)

Our advancements in vision, speech, machine reading, and translation in just the last few years are helping us fulfill our mission of helping every person and organization to achieve more by enabling us to develop a roadmap that takes AI out of the lab and infuses it into our products as quickly as we can.

We act ethically

Microsoft believes that the development and deployment of AI must be guided by a strong ethical framework. In the book [The Future Computed](#), we laid out six core principles that we believe should guide the work around AI. Four core principles of fairness, reliability and safety, privacy and security, and inclusiveness are underpinned by two foundational principles of transparency and accountability:

- **Fairness** - We have committed to promoting fairness by understanding how bias can be introduced into AI models and affect recommendations. Attracting a diverse pool of AI talent,

developing analytical techniques to detect and eliminate bias, and leveraging human review and domain expertise are all essential to fairness.

- **Reliability and Safety** - We're working to ensure that our products maintain high standards of reliability and safety by evaluating training data, testing extensively with a user feedback loop, monitoring ongoing performance, and designing them in anticipation of unexpected circumstances – including nefarious attacks.
- **Privacy and Security** - We've made security and privacy a top priority by helping ensure compliance with existing privacy laws (including GDPR), providing transparency and choices regarding data collection and use, designing our systems to protect against bad actors, and using de-identification techniques to promote both privacy and security.
- **Inclusiveness** - We pursue inclusiveness by using inclusive design practices to address potential barriers that could unintentionally exclude people, enhancing opportunities for those with disabilities, building trust through contextual interaction, and designing with emotional intelligence in mind.
- **Transparency** - We believe people should understand how decisions were made. We strive to provide contextual explanations of our AI processes and we make it easier to raise awareness of potential bias, errors, and unintended outcomes.
- **Accountability** - We believe in creating accountability for how systems operate. We're ensuring that norms are observed during system design, in an ongoing manner, and that there is a role for internal review boards.

Get started today

Microsoft 365 is a great way to bring everyday AI to your organization right away. Take advantage of thirty years of research and development from Microsoft to amplify individual skills and foster teamwork, gain valuable insights to make better decisions, and enjoy a secure, flexible work environment.

Microsoft 365 brings together Office 365, Windows 10, and Enterprise Mobility + Security and is a complete, intelligent solution to empower employees to be creative and work together, securely. As a cloud service, it is continuously improving with updated capabilities and AI models that get better through the hundreds of billions of customer interactions with the service every day.

Successful change doesn't happen in an instant. In a recent study, Forbes Insights highlighted the need to create an AI-ready culture. The idea of using AI technology to augment current skills and processes will not be easy for everyone in your organization to accept, so an effective adoption plan can be a big help.

Forbes Insights recommends the following steps to maximize your investment^{xv}:

- Focus on business needs
- Place AI in the hands of knowledge workers
- Implement education and training programs
- Appoint AI champions
- Reward and highlight early success

We believe Everyday AI in Microsoft 365 can immediately help employees and companies to achieve more by providing intelligent technologies that focus on business needs and empowering knowledge workers.

To learn more about Microsoft 365, please contact your Microsoft sales representative or visit the Microsoft 365 [website](#).

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ⁱ [How AI enhances personal productivity and team collaboration](#), Constellation Research, September 17, 2018

ⁱⁱ <https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html>

ⁱⁱⁱ "Extending the Value of AI to Knowledge Workers," a Forrester Consulting study commissioned by Microsoft, February 2019, <https://aka.ms/GraphPoweredAI>

^{iv} <https://eiperspectives.economist.com/technology-innovation/intelligent-economies-ais-transformation-industries-and-society>

^v <https://www.fastcompany.com/944128/worker-interrupted-cost-task-switching>

^{vi} Based on a study of US knowledge workers conducted online, PSB Research, commissioned by Microsoft, 1,400 participants, April 2018; actual percent at +/-3% at 95% confidence level.

^{vii} Regalado, Antonio. "The Data Made Me Do It." MIT Technology Review, May 3, 2013, <https://www.technologyreview.com/s/514346/the-data-made-me-do-it>.

^{viii} "Extending the Value of AI to Knowledge Workers," a Forrester Consulting study commissioned by Microsoft, February 2019, <https://aka.ms/GraphPoweredAI>

^{ix} Harvard Business Review Analytic Services (2018) The workplace evolution.

<https://hbr.org/resources/pdfs/comm/microsoft/workplaceevolution.pdf>

^x Manyika, James, et. al. "Big data: The next frontier for innovation, competition, and productivity." McKinsey Global Institute Report, McKinsey & Company, May 2011, <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/big-data-the-next-frontier-for-innovation>.

^{xi} Manyika, James, et. al. "Big data: The next frontier for innovation, competition, and productivity." McKinsey Global Institute Report, McKinsey & Company, May 2011, <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/big-data-the-next-frontier-for-innovation>.

^{xii} "Big demands and high expectations: The Deloitte Millennial Survey." Deloitte Millennial Survey, Deloitte, January 2014, <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-dttl-2014-millennial-survey-report.pdf>.

^{xiii} Gartner: The Business Value of Artificial Intelligence, 2017-2025

^{xiv} "Everyday AI: Harnessing AI to Empower the Knowledge Worker" Forbes Insights study, January 2019, <https://aka.ms/AIforKnowledgeWorkers>

^{xv} "Everyday AI: Harnessing AI to Empower the Knowledge Worker" Forbes Insights study, January 2019, <https://aka.ms/AIforKnowledgeWorkers>