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Outlook on Artificial Intelligence in the Enterprise

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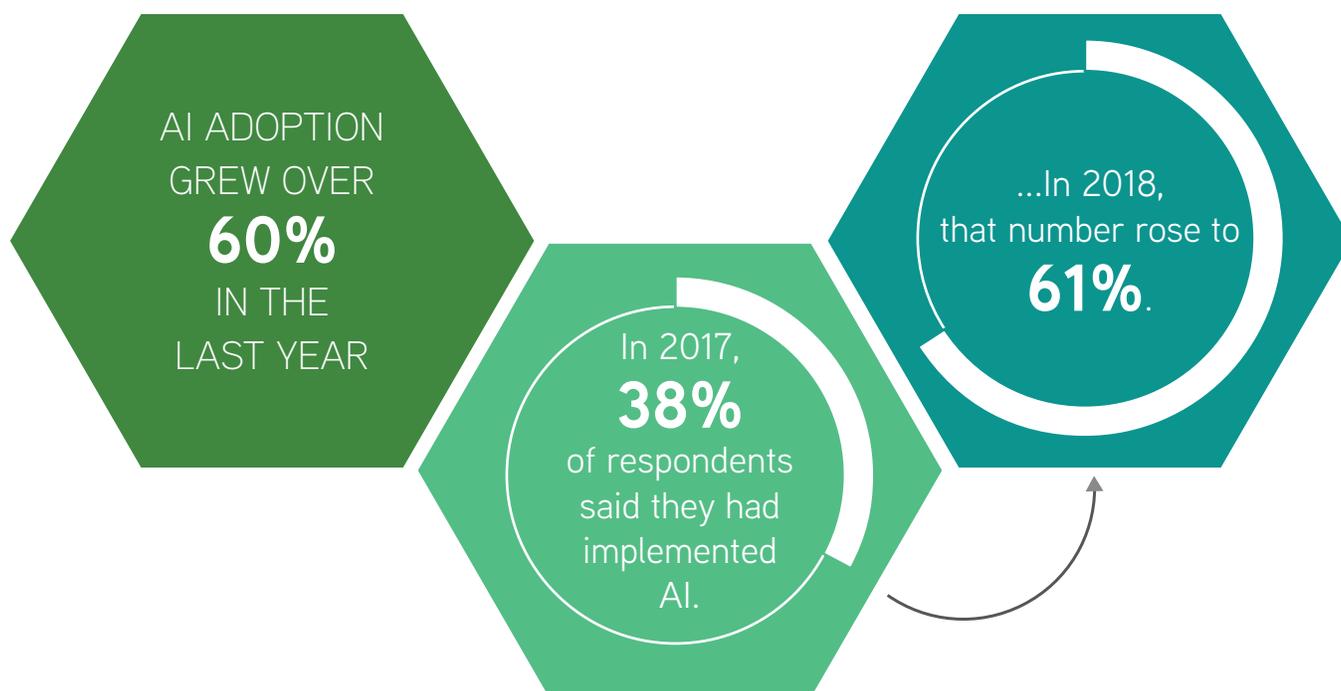
Presented by Narrative Science in partnership with
the National Business Research Institute

CONTENTS

Introduction	3
AI Application Today	4
AI Potential	6
Requirements for Success	8
Conclusion	11

Introduction

Artificial intelligence has often felt like *tomorrow's* story--flush with promise, but always just out of reach. But the truth – backed by real-world deployment data and examples – is that AI is here today, and quickly growing in its applications and impact on business and society.



As AI moves deeper into mainstream enterprise, it's important to realize this is just the beginning, not the end-point. Sectors that have pioneered the use of AI, like financial services and healthcare, will be joined in leveraging the power of artificial intelligence by sectors from product manufacturing to retail. Within those industries, AI will go from being a specialty innovation, to being involved in mainstream operating functions.

At each step, AI's progression must be driven by reality, not hype: it should be deployed at the right time and deliver quantifiable business benefits and returns on investment. To reach that potential, AI must not be feared, but rather used as a humanizing force: putting a story, via intelligent language interfaces, and

a face, via image recognition, in front of technology in the workplace.

To better understand the evolving impact of AI in the enterprise, we recently surveyed leading business and technology executives from a variety of industries. The results, presented below, paint a picture of AI having a significant and imminent impact on everything from company strategy, to business operations, to job functions.

The time has come for every enterprise to come to grips with AI's impact and challenges, and begin to build a roadmap to harness its potential to transform businesses and industries.

AI is here today, and its impact and application is growing

Because artificial intelligence has been on the radar for so long – often through headlines trumpeting its most sensational aspects – it's easy

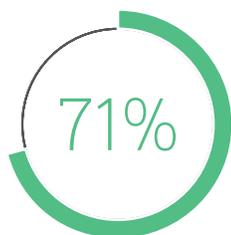
to miss that the last few years may very well represent a tipping point for AI as a mainstream business tool. Our survey data tells the tale:

AI IS HERE TODAY



of respondents say they are implementing AI.

TECH INNOVATION IS DRIVING BUSINESS STRATEGY



said their company has an 'innovation strategy' to drive investments in new technologies like AI.



A majority of companies said they had budget dedicated to enabling innovation...

INVESTMENT IS ON THE RISE

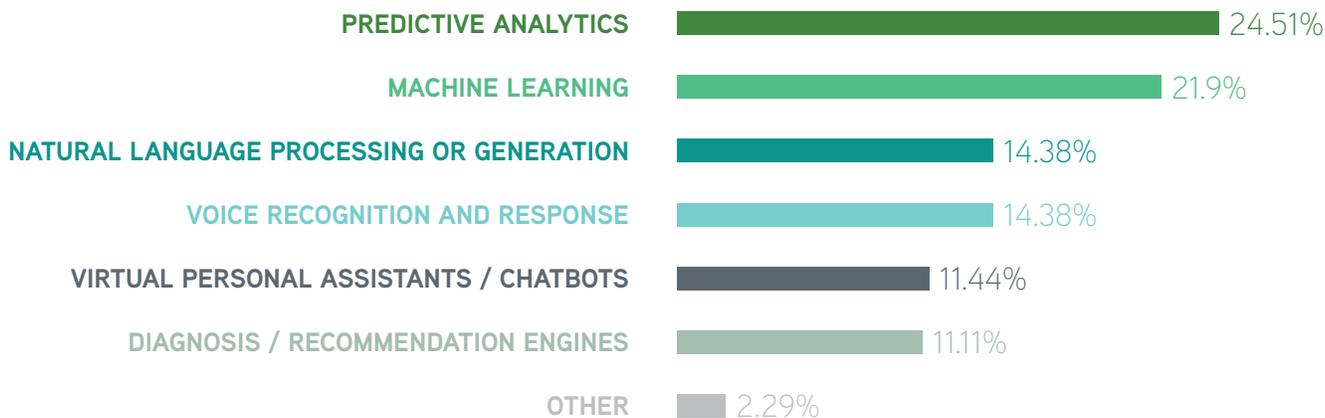


...with most citing their budget had increased over the past year.

That near-term focus, driven by allocated budget and in-production deployments, is all about taking advantage of AI in the present, not the future, to enhance productivity, create new products, personalize interactions, and

automate manual tasks. AI has emerged as a practical tool with real-world applications, led by uses that should be familiar to anyone that has followed the technology, such as predictive analytics and machine learning (see chart).

THE MOST WIDELY USED AI-POWERED SOLUTIONS



Just as notable, however, is the growing use of AI to help ‘humanize’ technology. Natural language processing/generation and voice recognition/response

enable more natural speech-based communications, and personal assistants and chatbots put an even more personal touch on people-machine interactions.

According to our survey, these AI capabilities are having an impact on a growing number of business departments and functions:



BUSINESS INTELLIGENCE

90% of respondents working in business intelligence said they would be interested in **incorporating AI to make their data analytics tools smarter.**



FINANCE

87% of respondents working in finance departments said they would be interested in **using AI to automatically generate insights and reporting in human-sounding language.**



COMPLIANCE/RISK

55% of corporate compliance risk officers said they use AI today or would be interested in **using an AI-enabled technology to help create regulatory reporting.**



PRODUCT MANAGEMENT

68% of respondents working in product management said they would be interested in **using AI technologies to generate performance information** (profit and loss, revenue, usage, churn, etc) about the products they manage.



MARKETING/SALES

77% of respondents working in marketing and sales said they would be interested in **applying AI to automatically generate reporting in natural language.**



COMMUNICATIONS

43% of respondents said they send **AI-powered communications** to internal employees today; 35% said they send **AI-powered interactions** to customers.

To reach full potential, AI must be a transparent and ultimately *humanizing* force, bridging the people-machine worker-technology gap

AI is ultimately about people – helping people better interact with technology, automate mundane tasks, and generate analysis. So it's crucial to understand what individuals think about AI: What are their

expectations? What role do they see it playing in their everyday work? What roles and tasks do they believe it can address? How do they prefer to interact with it?

Survey respondents anticipate an array of high-level benefits from artificial intelligence, including:

THE TOP 4 BENEFITS ENTERPRISES SEE FROM USING AI SOLUTIONS

1. Identifying business opportunities
2. Automating repetitive tasks
3. Improving workforce productivity
4. Competing with peers

These are some of the most crucial tasks any business can undertake. Getting day-to-day work done. Pleasing customers. Anticipating and responding to business challenges, both tactically, in the near-term, and strategically, in the long run. Taking full advantage of artificial intelligence in these scenarios can be a tricky balance.

Concerns about the potential negative impacts of AI – from privacy to de-personalization to job replacement – demand that AI be deployed transparently and in a clearly-defined manner. Workers and customers both want to understand where AI is being deployed and how AI is being used. At the same time, for AI to be most effective, the AI must also be seamless, bordering

on invisible. Interactions with AI must be natural and 'human' – **improving** rather than replacing personal interactions and day-to-day work tasks.

Improving interactions calls for an AI that is not just a computational or processing engine but a vehicle for more 'human-like' people-machine interactions. We see that today with consumers interacting with their Amazon Alexa personal assistants, posing natural language questions and receiving correct and personalized responses. The results from a query posted to Alexa or other emerging digital personal assistants are not only effective – they can border on the magical.

Technologies such as natural language generation (NLG) are especially important in the enterprise, helping workers automate and improve rote tasks and enhanced crucial business processes. NLG utilizes artificial intelligence to better understand what people want to communicate, highlight what is most important and impactful, and then deliver the results in natural language. Its full power is realized not as a standalone solution, but as one tool integrated into other AI-driven analytics applications, producing narratives capable of explaining insights that raw data and even data visualizations cannot do alone.

From our survey results, respondents believe AI and applications like natural language generation can help them better perform many important everyday work tasks, including:

DATA ANALYSIS



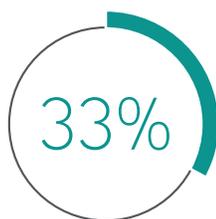
95% of survey respondents said they are interested in using AI-powered technology that provides natural language insights into data. In particular, they anticipate AI-based natural language generation to yield more consistent accurate data reporting; save time and free employees to focus on more high value work.

IMPROVED ACCURACY



50% of survey respondents said they spend significant time reviewing their team's work and correcting inaccuracies, critical processes that could be improved and automated using AI.

PRODUCT IMPROVEMENT



33% of survey respondents said they have considered integrating AI-powered technologies to help differentiate their products.

PERSONALIZED COMMUNICATION:



Nearly a quarter of survey respondents said they believe that AI-based natural language generation will help them produce more personalized and relevant information at scale for customers and prospects.

Realistic adoption timelines — and quantifiable ROI — is critical for enterprise AI success

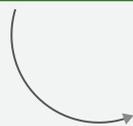
We've seen the power AI has to transform business processes and help employees get their work done. But the deployment of artificial intelligence is clearly not without challenges as well. Skepticism about the power and impact of AI can largely be traced to past missteps:

not understanding what problems AI can address, overstating its potential impact; mistiming its readiness; and failing to measure the return on AI investments. It is critical for enterprises considering AI deployments to avoid such mistakes in the future.

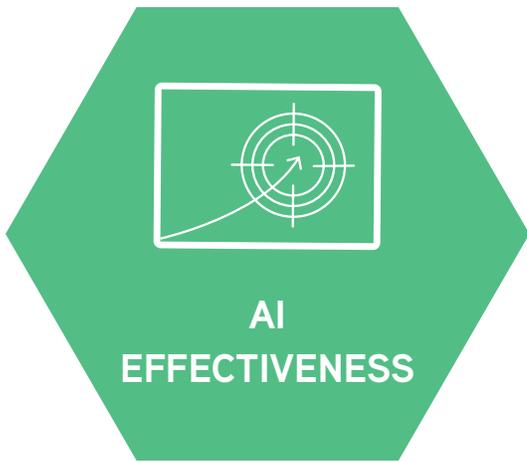
Here's how we found our survey respondents dealing — or in some cases not dealing — with these issues:



With all of the hype and uncertainty that AI brings, it can be challenging for businesses to decide when to dive in. We found this to be true in our survey, with 42% of respondents citing they are uncertain as to when they would deploy AI. In some ways this is understandable, as many enterprises are still working to understand how AI can impact their business. We expect that uncertainty to steadily decrease as AI continues to prove its worth.



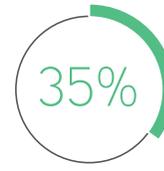
The largest number of respondents said they are uncertain as to when they would deploy AI.



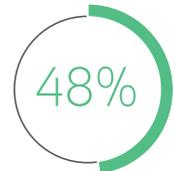
The best driver for increased AI adoption is success in early deployments, and here we see some early challenges. Asked if their organization was 'effective' at using AI, respondents "strongly agreed" or "agreed" for the following use cases:



DECISION-
MAKING



EXTERNAL
COMMUNICATIONS



INTERNAL
REPORTING

Early market challenges exist for AI deployments.



For AI to be successful, return on investment must be tracked – and ultimately realized. According to our survey, while 69% of respondents track the ROI of AI, 31% are either not tracking ROI or are not seeing returns on their current AI investments. Those numbers must improve as AI projects move from pilot phases, to production deployments expected to drive business results. The good news is that companies seem to be taking a broad view of the impact of AI, an approach that will help them more quickly quantify AI benefits. According to our survey, enterprises are tracking AI ROI via a range of metrics, including time savings (26%), operational efficiency (21%), level of accuracy (21%), employee productivity (19%) and new product revenue (14%).

A broad view of AI impact will help companies quickly quantify benefits.

Ultimately, enterprises must judge the timeline for deployment and the return on investment of AI based not on pie-in-the-sky projects but real-world impact on business departments and processes. That said, it won't always be a straight line to success.

For instance, as we saw earlier, risk/compliance officers have been one of the earliest groups to deploy AI to help with their regulatory reporting. Yet at the same

time, 39% of respondents said they wouldn't use AI for regulatory reporting, with 21% of this group saying they are concerned that they can't audit or review AI-driven regulatory reporting. That lack of human-level comfort with an AI process – worry about what's happening inside an AI 'black-box' – is something enterprises will have to address on a department-by-department, employee-by-employee basis.

Conclusion

It has been an interesting year in the development of artificial intelligence. It is difficult to read the business press without running across some mention of AI and its power to yield new insights and generate real value--as well as the challenges of taming its impacts on business and society.

But go beyond those headlines, and the real impact of AI begins to come into focus. More and more organizations are deploying AI-powered technologies, with goals such as improving worker productivity and enhancing the customer experience that are not only laudable, but achievable. A focus on realistic deployment timeframes and accurately measuring the effectiveness and ROI of AI is critical to keeping the current momentum around the technology moving forward.

Based on our survey findings, enterprises would do well to frame AI adoption as a step toward humanizing technology. Critics often fear the dehumanizing effects of new technologies, replacing rich human communications with cold, sterile machine interactions. With AI, the impact can be just the opposite. Technologies like voice recognition and natural language generation can improve how we interact with technology and machines, making it both more natural and more powerful, delivering interactions and yielding insights above and beyond what has been possible up to now. That is the promise of AI – and one that is increasingly within the reach of a growing number of organizations.

More and more organizations are
DEPLOYING
AI technology.

AI adoption should be framed as a step toward
HUMANIZING
technology.

The promise of AI is becoming more natural and more
POWERFUL.

Survey Methodology

National Business Research Institute deployed the survey online from August 24th to October 9th, 2018. When deployment ended, a total of 196 completed surveys were received. Statistically, the results of the present study reach an 84 percent confidence level with a 5 percent sampling error. The respondents spanned a variety of industries such as healthcare, manufacturing, and financial services, and included directors, vice presidents, and members of the C-suite. This report reflects the key insights that we gathered from that survey and is supplemented with third-party research as noted throughout the document.

About Narrative Science

Narrative Science is the leader in natural language generation for the enterprise. Its Quill™ platform, an intelligent system, analyzes data from disparate sources, understands what is interesting and important to the end user and then automatically generates perfectly written narratives for any intended audience, at unlimited scale. A diverse range of companies such as Deloitte, USAA, American Century Investments, MasterCard, and the U.S. Intelligence Community utilize Quill to increase efficiency through the elimination of time-consuming, manual processes related to analyzing data and communicating insights, freeing employees to focus on high value activities and better serving their customers.



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