



EARLY ADOPTION OF ARTIFICIAL INTELLIGENCE

THE CHALLENGES AND BENEFITS

GETTING IN EARLY –

THE CHALLENGES AND BENEFITS OF EARLY ADOPTION



Commercial and industrial use of Artificial Intelligence (AI) has just recently hit the mainstream. So businesses that were some of the earliest adopters of AI and machine learning are only now starting to see a return on their initial investment. As with many developing tech spaces, the first ones in are likely to see a much wider range between a successful investment and an early failure. With that in mind, some of the extreme numbers should be taken with a grain or two of salt.

Early adopters tend to be larger companies that have the capital to risk and experiment and plenty of experience in the tech sector. Among those that have taken these early steps, about 22% are seeing high-level returns on their early investments.

But much of the information is still to come as many companies look at their data science division as a R&D centers rather than pure profit centers. However, that is about to change. As AI and machine learning continue to mature, they are well on their way to becoming commonplace technical solutions. Here's a look at how some early investments have already shown results and where experts think the technology is going in the future.

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REAL NUMBERS

\$3.7
TRILLION

INITIAL INVESTMENT: Estimates put the total investment in machine learning, digital transformation and data-driven projects at **\$3.7 trillion for 2018**.

47%

STRATEGY IN PLACE: A study by Adobe found that **47% of digitally mature organizations** – those that employ advanced digital practices – have an articulated AI strategy.

2.5%
ERROR RATE

SMART IMAGE LABELING: When AI applications were recently asked during a competition to identify the contents of a digital image, they had an **error rate of less than 2.5%**. The same competition in 2010 had an error rate of 28.5%.

\$1 BIL
PER YEAR

NETFLIX: The streaming service learns your taste, compares it to its huge database and recommends new show and movies that it thinks you will like. The company credits this recommendation engine with **reducing customer churn by \$1 billion every year**.

6
TIMES
SINCE 2000

VENTURE CAPITAL GROWTH: Investment by venture capitalists in AI startups has **increased six-fold since the year 2000**, while the total number of AI startups is 14 times greater over the same time period.

87%

SALES FORECAST: **Eighty-seven percent of early adopters** of AI technology say they already do or plan to use AI for sales forecasting and improving email marketing.

35%
OF SALES

AMAZON: Amazon.com analyzes a user's purchase history, contents of the cart, what items they have rated and what other people buy and like. This results in a personalized recommendation for each customer that is carefully ranked to promote a range of products. The result is that personal recommendations from this system result in **35% of Amazon's \$178 billion annual sales**.

PLUS
16%

NEW IN 2018: Entering 2018, about 15% of businesses were employing AI or machine learning. But by the end of the year, that number was expected to **more than double to 31%**.

3

MONSTER NEEDS: According to job board Monster.com, the top three in-demand job skills are **Machine Learning, Deep Learning and Natural Language Processing**.

PROJECTED NUMBERS

90%
COMPANIES

CHIEF DATA OFFICERS: Gartner estimates that by 2019, **90% of large companies** will have a Chief Data Officer or Chief Analytics Officer, showing the importance that business is placing on better use of information assets.

\$1.2
TRILLION

EARLY INVESTORS: A study shows that companies that are heavily invested in AI will **generate \$1.2 trillion more revenue** than similar companies that don't make that leap.


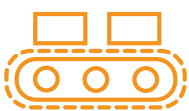
\$6.6
BILLION

MEDICAL INDUSTRY: Accenture showed data that said AI healthcare spending could reach **\$6.6 billion by 2021** while paving the way for nearly \$150 billion in savings industry-wide by 2026.

\$15.7
TRILLION

TOTAL IMPACT: Research by PwC shows that AI innovation could **produce up to 14% higher (\$15.7 trillion)** in the world economy by 2030. AI and machine learning contribute to accelerated development of technology, productivity gains in productions, increased consumer demand for better products and cost savings from automation. These functions hold true to varying degrees across multiple industries.

KEY IMPACTED SECTORS:

 HEALTHCARE	 AUTOMOTIVE	 FINANCIAL SERVICES	 TRANSPORTATION AND LOGISTICS
 TECHNOLOGY, COMMUNICATIONS & ENTERTAINMENT	 RETAIL	 ENERGY	 MANUFACTURING

EASY COST SAVINGS WITH AI

The field of IT system monitoring and triage of support tickets has already proven itself adaptable to AI integration. By turning over the day-to-day processing and response to routine support tickets, IT departments have freed up manpower and costs to help focus on more important tasks.

A typical large enterprise's support department receives constant alerting from its monitoring solutions across the network. **Nearly 69% of internal support tickets are routine** and only require a single action and on the part of support. However, **a large company might receive as many as 55 alerts in an hour**, meaning that it takes more than 24 hours to respond to the average ticket.

Typical support desks **spend as much as 68% of their budget on personnel costs, but less than 10% on technology**. So reducing man-hours is the most effective way to save money. Because there is so much routine, repeatable work involved in responding to these alerts, IT support is a prime candidate for automation through AI and machine learning.

By replacing the requirement for human interaction with a machine-learning program, **the time spent managing routine tickets can be shifted to more complex problems**. Response time and productivity increases.

The system can receive a report, properly triage its severity and importance and then respond appropriately:

- *For severe problems or high-priority alerts, it can quickly gather more data and pass the ticket to a human.*
- *For routine problems that happen often, the system responds immediately and resolves it in the same way human support personnel have done for years.*

The added benefit is that the system is also programmed to take the time to prepare a complete documentation of the problem and solution – something most support departments don't emphasize. This creates an incredibly useful Big Data set that can be analyzed and used to measure system performance and find inefficiencies.

Machine Learning and AI are beginning to revolutionize IT support and monitoring functions at many companies. **With a properly configured solution, companies are saving time and manpower while also receiving quicker average response times.**

TAKING THE FIRST STEP

AI and machine learning are growing rapidly, but most technology sectors are still at the very beginning of this exciting opportunity for change and improvement. Getting started as an early adopter is not easy, but the benefits are clear.

AND IT'S NOT TOO LATE.