

## THE STATE OF GLOBAL AI ADOPTION IN 2022





The pandemic years have been decisive for the adoption of artificial intelligence among companies. Business owners, entrepreneurs, and tech scions across the globe have come to realize the full potential of automation and AI in combating the COVID-19 fallout and propelling business resilience.

Post-pandemic aftermath has led to unpredictable customer behavior. Historical data has been rendered ineffective and companies needed tools to analyze data. Combined with the growing amount of data, the business landscape has become an uncharted territory that cannot be explored without forecasting tools. Although different, post-pandemic business repercussions have one commonality. The majority of them can be minimized or eliminated with artificial intelligence systems and real-time data analysis.

As a result, the adoption rate has skyrocketed at a 20% to 37% increase compared with prepandemic.

# 69% of companies have decided to implement or plan AI adoption in 2022.

O'Reilly

In this paper, we'll take a look at the current status of AI adoption by industry and the main blockers that hamper implementations. In the final part of our white paper, you will find actionable guidelines on how to choose the right Al vendor for your automation journey.

## What is the current state of Artificial Intelligence?

This year, the figures demonstrate the strong maturity of AI technology. More than ever before, businesses are pursuing to successfully leverage intelligent algorithms to support both internal and external applications. The overall percentage of Al-friendly companies has surged as well.



The rising adoption rates are complemented by increasing investment. Larger budgets are also an

indication of artificial intelligence coming of age in both small and large-scale enterprises.

**\$500K to \$5M** - an average budget amount for implementing artificial intelligence in 2022.

<u>Appen</u>

The application matrix of smart systems has also changed since the pandemic began. The overwhelming majority of adopters employ machine intelligence to unlock customer insights and improve the overall customer experience. Fraud detection has also become the top of mind for **46% of Al adopters**.

#### Leading AI applications by year

#### Statista



The long-term results of automation stretch beyond the business frontline in 2022. According to <u>McKinsey</u>, the impact of algorithms holds firm on the bottom line.

27%



of companies report 5% of earnings before interest and taxes attributable to artificial intelligence. Years before, the number stood at 22 percent.

the percentage of companies that see a positive impact of AI on earnings.

<u>McKinsey</u>

If we look at the geography, AI excellence is still distributed unevenly. The region of Oceania sits on top of automation adopters with over  $\frac{30\%}{30\%}$  of use cases in production. North America and Europe also lead the

innovation craze with 27% of respondents with AI in production (both 27%). Asia closes the top three with 24% of implemented intelligence.



Currently, the positive statistics demonstrate an encouraging certainty in the potential of artificial intelligence. The technology is set to revolutionize and automate core business processes across industries - from climate change to healthcare. Backed up by industry giants and driven by a growing need for data analysis, the market size of automation is estimated to reach over \$997 billion in 2028.

## The global artificial intelligence market size will grow from \$93.53 billion in 2021 to \$997.77 billion in 2028.

Grand View Research

## Al adoption by the industry

The past decade has seen a surge in the adoption of smart systems across all industries. From retail to healthcare to manufacturing, businesses of all sizes are turning to AI to improve their operations and better serve their customers.

The manufacturing industry has high hopes for deploying automated capabilities. The market size in this realm is predicted to reach over **\$60 billion** by the end of 2022.

#### Global artificial intelligence market size by industry

Gartner



The high expectations from Al-driven automation are attributed to the ever-growing amount of Big data in manufacturing. The proliferation of the Internet of Things sensors also adds to the body of knowledge poised for analysis. Thus, the global Big data in the manufacturing industry is expected to reach <u>\$9.11</u> <u>billion</u> by 2026, while the annual data creation in manufacturing equates to over 1800 petabytes.

## 1812 petabytes - the amount of industrial data generated annually.

Deloitte

Healthcare is another automation leader. Steered by the prospects of expert systems in gene engineering and drug discovery, the total AI in the healthcare market is projected to hit over <u>\$95 billion</u> by 2028. In 2021, this number lingered at \$6.60 billion. Labor shortages and an increasing strain on healthcare personnel also create a breeding ground for automation. If we have a closer look at the prospects of automated healthcare, the application area is diverse. Robotassisted surgeries are among the most promising areas with <u>\$40 billion</u> of potential value by 2028. Automated administrative workflows, fraud detection, and individual dosage calculation are also put at the center of intelligent transformation.

#### Al application matrix in healthcare

**APPLICATION** POTENTIAL ANNUAL VALUE BY 2026 **KEY DRIVERS FOR ADOPTION** Technological advances in robotic **Robot-assisted surgery** \$40B solutions for more types of surgery Increasing pressure caused by medical Virtual nursing assistant 20 labor shortage Easier integration with existing Administrative workflow 18 technology infrastructure Need to address increasingly complex Fraud detection 17 service and payment fraud attempts Prevalence of medical errors, which 16 Dosage error reducton leads to tangible penalties Proliferation of connected machines/ **Connected machines** 14 devices Patent cliff; plethora of data; Clinical trial participation 13 outcomes-driven approach Interoperability/data architecture to 5 **Preliminary diagnosis** enhance accuracy Storage capacity; greater trust in Al 3 Automated image diagnosis technology Increase in breaches; pressure to Cybersecurity 2 protect health data

<u>Accenture</u>

Smart systems are also rapidly transforming the finance and banking industries. By automating repetitive and time-consuming tasks, machine learning algorithms allow employees to focus on more strategic business tasks. Established banking institutions are also fast to employ automated analysis.

<u>U.S. Bank</u> is applying AI in both its middle- and backoffice applications. Experts systems help U.S. Bank analyze customer data during the KYC process to eliminate fraud. The bank is also an advocate of AI for anti-money laundering as automated algorithms fare better compared with the traditional capabilities.

The best practices of U.S. Bank overlap with the general market trends. Machine learning is leveraged by finance companies and institutions to improve customer experiences and back-office. Al is also helping businesses to identify and act on opportunities faster, and to better manage risk.

## Machine learning is leveraged by finance companies and institutions to improve customer experiences and back-office.



Beyond the industries mentioned above, automated infrastructure also amplifies entertainment, sports, logistics, and other verticals.



Although the mileage varies, global businesses invest in custom machine learning solutions with one goal in mind - to improve decision-making. The latter, in turn, invites a more granular customer experience, reduced operational cost, and the final output of the automated business operation.

## Al adoption rate among companies

Globally, there has been a positive dynamic in increasing investment in Data and AI initiatives. According to the survey by <u>NewVantage Partners</u>, a whopping 97% of companies are investing in data initiatives, while AI projects get financial support among 91% of companies. Moreover, business leaders from both small (<u>88%</u>) and large (80%) companies say AI technology helped their company during the COVID-19 outbreak.

Expert systems are becoming prevalent for the digital initiatives of global companies. As the data suggests, <u>95%</u> of companies put artificial intelligence at the

heart of their digital transformation efforts. While the adoption rate varies between businesses and verticals, companies tap into automation to reap a similar bag of benefits.

Reduced costs, accelerated sales, and increased workforce productivity guide the AI agenda among companies. Other organizations channel their automation efforts towards product enhancement and resource optimization. At the same time, risk management, customer experience, and regulatory compliance remain among the most pronounced benefits of AI adoption.

#### Major machine learning benefits for businesses



From a historical perspective, the status quo of expert systems has changed during 2019-2022. Compared with 2021, organizations are stepping up their innovation activities. Data-driven transformation and analytics set the tone for all intelligent activities in 2022. However, in 2020, more companies saw data culture as their top priority, while 2022 has struck a balance between the boom in 2020 and the downswing in 2021.



#### State of Big data and Al adoption among global businesses

The correlation between company size and its adoption rate is evident in 2022. Large-scale companies are leading the adoption race, while smaller businesses do their best to catch up.

Around <u>59%</u> of enterprises had ML initiatives either in production or at a proof-of-concept stage, compared with 57% in 2020. In 2022, <u>63%</u> of companies report they reached their planned AI adoption goals.

Lots of modern enterprises also rush to snap up machine learning technology talent. Apple, Google, and Microsoft are the usual suspects when it comes to innovation. Other A-list giants have also been aggressively acquiring AI startups in the last decade. With no doubt, Apple leads the way, making 29 total acquisitions since 2020, while Google has attracted only 15 promising startups.



#### Number of AI acquisitions from 2019 to 2021, by company

Number of acqusitions

Although small and mid-sized companies traditionally lag behind industry titans, the digitalization craze has influenced their adoption plans. According to Deloitte, <u>80%</u> of mid-sized companies plan to shoot up their investments, compared with 57% of enterprises.

To drive down the upfront expenses, midsize companies leverage cloud capabilities for their automation needs.

#### State of AI adoption among midsize companies

Deloitte

Compared to their larger counterparts, midsize companiesare...

Midsize companies

Very large enterprises



## Top 5 Al adoption challenges and ways to overcome them

Expert systems will fundamentally change the way people and machines interact while influencing the business strategies of global markets. However, companies restrain their technology adoption rates and there's a solid rationale behind it. Despite AI's potential to deliver significant benefits, many organizations struggle with how to get started due to the common adoption challenges.

#### 01

## **Data and IT infrastructure**

#### **CHALLENGE:**

It's an axiom that algorithms require significant tech infrastructure and massive amounts of clean and structured data. The more data you have and the more processing power you're able to throw at it, the better your AI system will perform. This can be especially challenging for companies with outdated software, onprem infrastructures, or insufficient IT teams. Although organizations ramp up their data literacy, only <u>19.3%</u> indicate that they have established a data culture. As a result, most business data is siloed in isolated enterprise systems or scattered across departments. Unstructured, inaccessible, and incomplete data, in turn, hampers successful business intelligence and smart analysis.

#### **SOLUTION:**

To accommodate your intelligent infrastructure, you should turn to <u>data scientists and BI engineers</u>. They will migrate your on-premise assets to the cloud for

easier analysis and set up a data-first environment with cleaned and aggregated outputs.

#### 02

## Lack of skills

#### **CHALLENGE:**

Successful initiatives are also shackled by the limited availability of trained data scientists. Companies don't always have dedicated data analysis units with enough Al expertise to start adoption. Moreover, a separate set of skills is needed for managing the implementation process, including project management, business analysis, and more. According to <u>Deloitte</u>, the talent market is exacerbated by significant labor shortages. 23% of adopters report major or extreme skill gaps when launching their artificial intelligence initiatives. To tackle the shortage, companies shell out for corporate training or outsource talent acquisition.



#### Talent gaps by company's size

#### **SOLUTION:**

Your hiring shouldn't be limited to local talent pools. Consider contacting a third-party AI company that will support your artificial intelligence strategy and deploy the right talent.

Deloitte

## **Unclear benefits**

#### **CHALLENGE:**

Expert systems aren't a silver bullet that can mend all enterprise weaknesses. However, when companies aren't aware of their use cases or haven't analyzed the potential of machine learning for their organization, they don't realize clear goals and benefits. When implemented, undocumented smart initiatives fail to deliver value and results. Therefore, some companies shun automated capabilities or are unable to calculate the ROIs of their tech transformation.

#### **SOLUTION:**

Get to grips with the current automation potential of your company. Not all of your business functions are meant for smart systems, therefore artificial intelligence may sometimes be excessive. Make sure you start with one or a few business cases to ensure the seamlessness of your transformation.

#### 04

## **Ethical concerns and lack of regulation**

#### **CHALLENGE:**

Algorithm bias, ethics, and patchy regulation are also among the biggest challenges on the way to hyperautomation.



of adopters do not minimize unintended bias, while 52% ignore the privacy of their corporate data. trained data have been excluded or given preference. Also, inaccurate data aggregation and model design influence the output of your smart systems. All these increase risks for companies.

Artificial intelligence also tends to exhibit legal nuances that stem from insufficient regulation coverage and misalignment between geographical regions. Data privacy, security, and ownership are also among the biggest concerns that expose businesses to regulation penalties.

#### **SOLUTION:**

While the regulation arena still demonstrates discrepancies, you can ensure data safety and algorithm impartiality. By applying the best data

security policies, your team will safeguard sensitive data and the fair output of smart systems.

Your AI vendor should be proficient not only in AI but in compliance policies, including GDPR, CCPA, and other laws enacted on both the federal and state levels. Regular model updates will also help minimize model drifts and inaccuracies.



Alexander Marmuzevich CTO at InData Labs

#### 05

## **Innovation-avert organizational politics**

#### **CHALLENGE:**

Sometimes, a time-tested company's culture acts as another implication of artificial intelligence that blocks change initiatives. Whether it's top management or employees, there can be people in the organization who may be resistant to or bullish on the change.

A lack of a clear AI strategy along with insufficient leaders' ownership of transformation contributes to the general distrust in smart systems. 16%

of employees trust Algenerated insights, while only 6% of front-line workers leverage the insights in decision-making.

<u> McKinsey</u>

#### **SOLUTION:**

A cultural reset is critical to creating value from commercial AI at scale. To nurture organizational change, company owners should increase automation awareness and educate employees on embracing the next-gen tools at their workplace. System training is also indispensable to make sure your team knows how to find their way around smart systems.



# How to find the right vendor for AI implementation

You may need the expertise of a reputable vendor on your way to tech intelligence. With a choice so wide, it can be challenging to secure the right Al talent. Below, we've completed the battle-tested tips and tricks on choosing the right tech parent.

## **Define your problem**



Without a clear business case on hand, you may be matched with irrelevant bids. Therefore, you need to first research your problem and shape a well-defined vision of your AI-ready function.

Make sure you are aware of current data governance policies since data availability is among the main cost drivers for the collaboration. If you don't have a unified data storage, you should audit all enterprise systems and storage to know exactly the data you'll train your algorithm on.

## **Research the vendor pool**



Start your research by sourcing potential candidates. You can find reputable vendors on online platforms such as Glassdoor or comb through <u>Al leaders on</u> <u>Clutch</u>. Leader matrix always features client reviews and flaship service lines of your vendor.

As an example of a recognized digital profile, you can check out the online presence of InData Labs. Our company has been listed among Top Global Service Providers by Clutch as a leading innovation partner with 8+ years of experience.

### Validate your partner

To set up your Al initiative for success, make sure you compare the potential vendor against a set of core benchmarks. We recommend picking an established tech company as it doubles your success rates. Multiple years of hands-on expertise usually transform into the technical proficiency and calibrated collaboration approach.



Here are some other considerations that should be made your front and center:



#### DOMAIN EXPERTISE

a solid tech stack isn't enough to bring your collaboration to fruition. Business-specific knowledge is a mandate for a perfect solution that solves the challenges of your specific business needs.



#### **RICH PORTFOLIO**

project diversity attests to the impeccable expertise of your vendor. The more domains and tech cases your vendor covers, the richer their experience is. In this case, you're also more likely to find projects similar to yours.



#### AWARDS AND CERTIFICATIONS

industry recognition is another good sign of a vendor's credibility. Ideally, your partner should be featured in multiple ratings.



#### **TESTIMONIALS**

a reputable company always has a wide range of success stories that validate the value of its input. Typically, a vendor has testimonials on its official website. You can also scour reviews on other sites.

For over 8 years, InData Labs has been working with global businesses across verticals. Therefore, we know first-hand how hard it can be to find a reliable vendor to transform your business idea into an aligned solution.

Along with the criteria we've mentioned earlier, it is crucial to have that click with the development team.

A positive rapport and mutual understanding between your company and the vendor will ensure a fruitful collaboration that sits on both the business side and the technical perspective of your product. It is also important to find a team that thinks beyond the terms of reference and is proactive in finding ways to solve the tasks of your project. Every business is unique and the vendor team should realize that.



# **2022: The era of business intelligence**

As we have stepped into the epoch of data awareness, adopting artificial intelligence is no longer an option, it's a mandate. Companies of all sizes and statuses have accelerated their tech transformation to usher in the much-needed data consciousness driven by the solid processing power of intelligent algorithms.

While we cannot see the arrival point of innovation, all verticals are now jumping on AI-powered systems to reap proven benefits. Along with the forecasting ability, artificial intelligence is widely used for ad-hoc analysis and automated brand health monitoring. Predictive maintenance, proactive security management, and better customer experiences are all the legacies of artificial intelligence. On a high level, smart algorithms step in to redefine outdated processes and strengthen business competitiveness.

InData Labs is at the forefront of this trend, helping businesses unlock the power of business intelligence through artificial intelligence. We believe that Al will help businesses to improve decision-making, optimize resources, and better understand their customers. Turn to InData Labs to stay ahead of the curve and reap the benefits of Al adoption.

#### **About InData Labs**

InData Labs is a leading data science firm and Alpowered solutions provider with its own R&D center. Having a mission to bring the power of Al to every business, we help organizations of any size create intelligent products and services or shape intelligent business processes.

Since 2014, our solutions and consulting services help our clients to get valuable insights into data, automate repetitive tasks, enhance performance, add Al-driven features, and prevent cost overruns.

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