Does the use of AI technologies increase market concentration by favouring large firms over smaller competitors?

Research Paper By Saanvi Bajoria

TABLE OF CONTENTS

1. Abstract 1

2. Introduction 2

2.1 Rise of Artificial Intelligence in the Modern Economy..... 2

2.2 Importance of Market Structure and Competition..... 3

2.3 The Debate: AI as a "Moat" or a "Ladder"..... 4

2.5 Structure of the Paper.....6

3. Theoretical Framework.....7

3.1 Artificial Intelligence as a General-Purpose Technology.....7

3.2 Market Concentration and Competition Theory..... 8

3.3 Data as a Strategic Economic Asset.....9

3.4 Platform Economies and Digital Dominance..... 10

3.5 Previous Research on AI and Market Structure.....11

4. AI Infrastructure and Capabilities in Modern Firms.....12

4.1 Data as a Foundational Resource..... 12

4.2 Computing Infrastructure and Technological Investment.....13

4.3 Corporate "AI Studios" and Internal Development..... 14

4.4 Talent Concentration and Specialized Expertise.....15

4.5 Security and Enterprise AI Systems..... 16

5. AI and Market Concentration: Advantages for Large Firms.....17

5.1 Economies of Scale in AI Development..... 17

5.2 Data Network Effects and Competitive Advantage..... 18

5.3 Integration of AI Across Corporate Ecosystems..... 19

5.4 Secure AI Infrastructure and Data Protection..... 20

5.5 Investment Capacity and Strategic AI Development 21

6. AI as a Market Equalizer: Opportunities for Smaller Firms..... 22

6.1 The Mid-Market Growth Revolution..... 22

6.2 Cloud-Based AI Platforms and AI-as-a-Service..... 23

6.3 Startup Innovation and Entrepreneurial Opportunities..... 24

6.4 Agility and Niche Market Specialization..... 25

6.5 Open-Source AI and Democratization of Technology.....26

7. SME Challenges and Implementation Barriers.....27

7.1 Implementation Gap, Cost, and Expertise Barriers..... 27

7.2 Dependence on Large Technology Platforms.....28

7.3 Integration Challenges and Legacy Systems..... 29

7.4 Security and Data Privacy Concerns..... 30

8. Workforce Transformation and Employment Effects..... 31

8.1 Changing Nature of Work in the AI Era 31

8.2 Flattening of Organizational Structures and Productivity..... 32

8.3 Emergence of Hybrid Human–AI Teams.....33

8.4 Shifts in Labor Demand and Skill Requirements..... 34

9. AI Literacy and Corporate Workforce Training.....35

9.1 The Growing Importance of AI Literacy..... 35

9.2 Corporate Upskilling and Reskilling Programs..... 36

9.3 Personalized Learning and AI-Based Training Systems.....37

9.4 Encouraging Experimentation and AI Adoption..... 38

9.5 Evaluating Human Skills in an AI-Enabled Workplace.....39

10. Ground-Level Workflow Transformation..... 40

10.1 From Drafting to Editing..... 40

10.2 Emergence of Agentic AI Workflows.....41

10.3 Productivity Improvements..... 42

10.4 AI Skill Wage Premium 43

10.5 Evolving Roles and Responsibilities..... 44

11. Markets with Limited AI Impact 45

11.1 Uneven Adoption Across Industries..... 45

11.2 Labor-Intensive and Physical Industries..... 46

11.3 Highly Regulated Industries..... 47

11.4 Local Service-Based Businesses 48

11.5 Creative and Craft-Based Industries and Implications.....49

12. Risks and Drawbacks of AI Adoption.....50

12.1 Market Power Concentration..... 50

12.2 Data Monopolies and Information Asymmetry..... 51

12.3 Barriers to Entry..... 52

12.4 Job Displacement, Bias, and Ethical Risks..... 53

12.5 Environmental Impact..... 54

12.6 Data Security and Intellectual Property Risks..... 55

13. Policy and Regulatory Implications.....56

13.1 The Need for Balanced AI Governance.....56

13.2 Antitrust Regulation and Market Competition 57

13.3 Data Governance and Access Policies..... 58

13.4 Ethical Governance, Innovation, and Coordination..... 59

14. Conclusion 60

15. References.....61

1. Abstract

Artificial Intelligence (AI) has become one of the most disruptive technologies that influence contemporary economic action. Companies of all sectors are moving towards AI systems to optimize their decision-making process, automate activities, develop big data, and optimize operations. As much as these developments are presenting a massive improvement in productivity, they have also caused a major debate in the field of economics and business research: does the use of AI technologies enhance market concentration by benefiting large companies at the expense of smaller ones?

Big companies usually have many benefits in the implementation of AI technologies. These benefits usually comprise the opportunity to work with large volumes of data, a highly developed computing infrastructure, highly qualified technical resources, as well as significant financial resources to create complex AI solutions. Consequently, big companies can typically incorporate AI into business processes, create their own data systems, and consolidate the already achieved competitive advantages. This could possibly result in the winner-takes-most in some sectors of the digital and data world.

Meanwhile, some technological barriers have been reduced by the development of cloud-based AI platforms, open-source models, and AI-as-a-service tools. With these innovations, small companies, startups and medium sized businesses are able to have access to the power of analytics and automation tools that was once inaccessible to smaller companies. This has in most situations helped the smaller firms to be more efficient, quicker in innovation and competitive in their niche market.

In addition to competition at the firm level, AI implementation is also changing the workplace organization and work patterns. The current situation is that workers are working in hybrid human-AI settings, where AI is being used to conduct routine analytical processes with human supervision, innovation, and strategic decision-making. Nevertheless, AI has not

created equal effects on industries, with labor-intensive, highly regulated, or relationship-driven industries facing slower technological change.

The paper will discuss the question of whether the application of AI technologies is a factor in market concentration by favouring large firms at the expense of smaller ones. The research suggests that, although AI has the potential to strengthen the benefits of large organizations, its net effect on competition is not straightforward and is industry-specific and highly dependent on access to technology, skills, and regulatory frameworks, as it is argued based on an overview of economic theory, industry practices, labor market transformation, and real-life examples.

2. Introduction

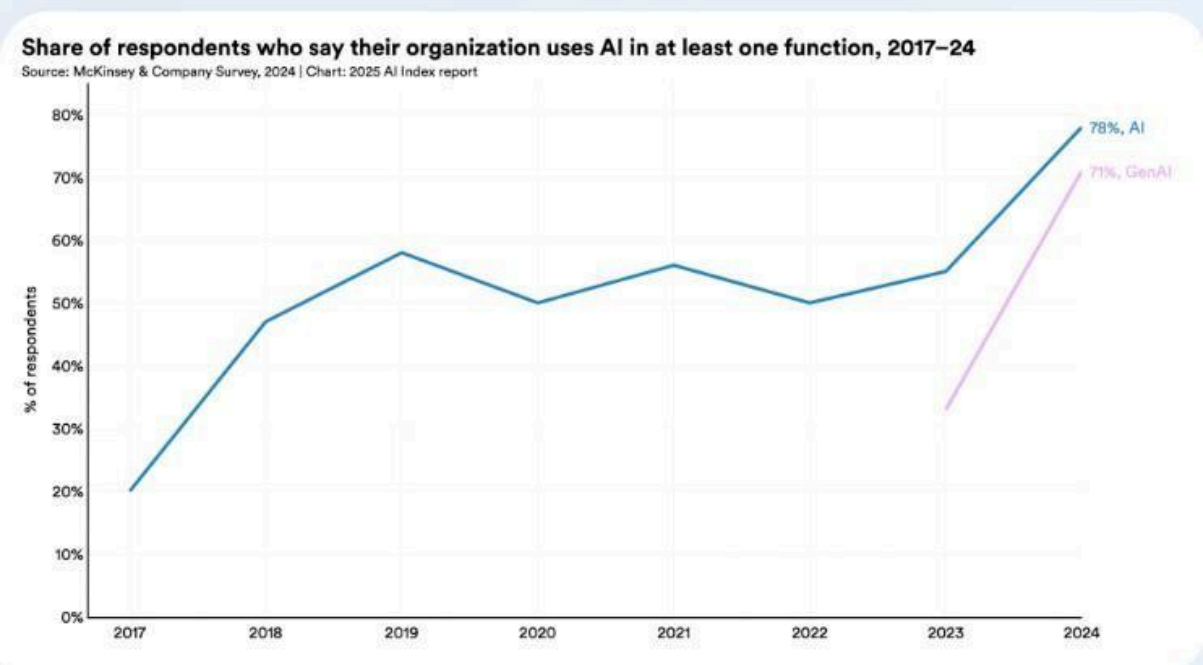
2.1 Rise of Artificial Intelligence in the Modern Economy

In the last ten years, Artificial Intelligence (AI) has grown as a specialized research discipline into a significant economic and technological change initiative. The current developments in machine learning, natural language processing, computer vision, and large language models have allowed organizations to automate complex processes, analyze large volumes of data, and produce insights previously unimaginable in scale. Consequently, AI technologies are gradually becoming part of the business processes in the technology, financial, medical, retail, manufacturing, logistics, and other industries.

Some of the most important developments that have facilitated the rapid growth of the use of AI include:

1. Increase in the production of digital data.
2. Increased computing capabilities and cloud computing.
3. Better machine learning algorithms.
4. More government and private investment in AI technologies.

All these have made AI a general-purpose technology on par with transformative technologies like electricity, the internet, and personal computing. General-purpose technologies transform the economic systems by changing the mode in which companies are producing, the way workers are doing their work and the way industries are developing.



Source : McKinsey & Company, 2024 | Chart: 2025 AI Index report

2.2 Importance of Market Structure and Competition

The market structure is a critical factor that determines the innovation, efficiency, and consumer welfare. When the markets are competitive, the firms are forced to be innovative and constantly improve their products to attract customers. But as markets get highly concentrated, that is when few firms control the market, competition can be undermined resulting in increased prices, less innovation and consumer inability to choose.

The change in technology may affect the concentration of the markets in various ways. Various innovations reduce entry barriers and enable smaller firms to compete better. Others

need massive funding, expert skills, and access to important resources, and aid the strength of existing companies.

2.3 The Debate: AI as a “Moat” or a “Ladder”

The responses to that question, whether Artificial Intelligence is a moat or a ladder, has an implication of the way businesses and individuals will respond in this technology transition. And we have AI is the new moat, a fortification. AI lock in • AI is a source of market dominance, it needs huge datasets, only the biggest players can access them, and it needs proprietary compute power, which the smaller players will never have access to. It is an opinion where A.I. makes a winner-takes-all world in which entry barriers and information hoarding keep old players safe.

However, the ladder perspective, in its turn, views an AI-guided democratization as an upward mobility. Cloud access to API, Open-source models provide startups and individuals with an alternative to the traditional gatekeepers.The ladder democratizes by letting people climb faster instead of locking them out, through productive effort magnified and creative output. Ultimately, it is highly likely that AI will turn out to be both: a moat to those who manage the infrastructure and a ladder to those who learn to utilize it. The true winners will be the ones who cease to regard A.I. as an enemy that must be protected and begin to view it as the steps to an even greater innovation.

2.4 Structure of the Paper

- **Section 3** analyzes the existing literature and economic theories about AI and market competition.

- **Section 4** examines the infrastructure and resources required for AI adoption within firms.
- **Section 5** analyzes how AI may strengthen the competitive advantages of large corporations.
- **Sections 6 and 7** explore opportunities and challenges faced by small and medium-sized enterprises.
- **Sections 8–10** examine workforce transformation, corporate training initiatives, and AI-driven workflow changes.
- **Section 11** talks about those industries in which AI is yet to be adopted.
- **Section 12** analyzes the risks and disadvantages of AI development.
- **Section 13** dwells on policy and regulatory implications.
- **Section 14** concludes by summarizing the findings and answering the research question.

3. Theoretical Framework

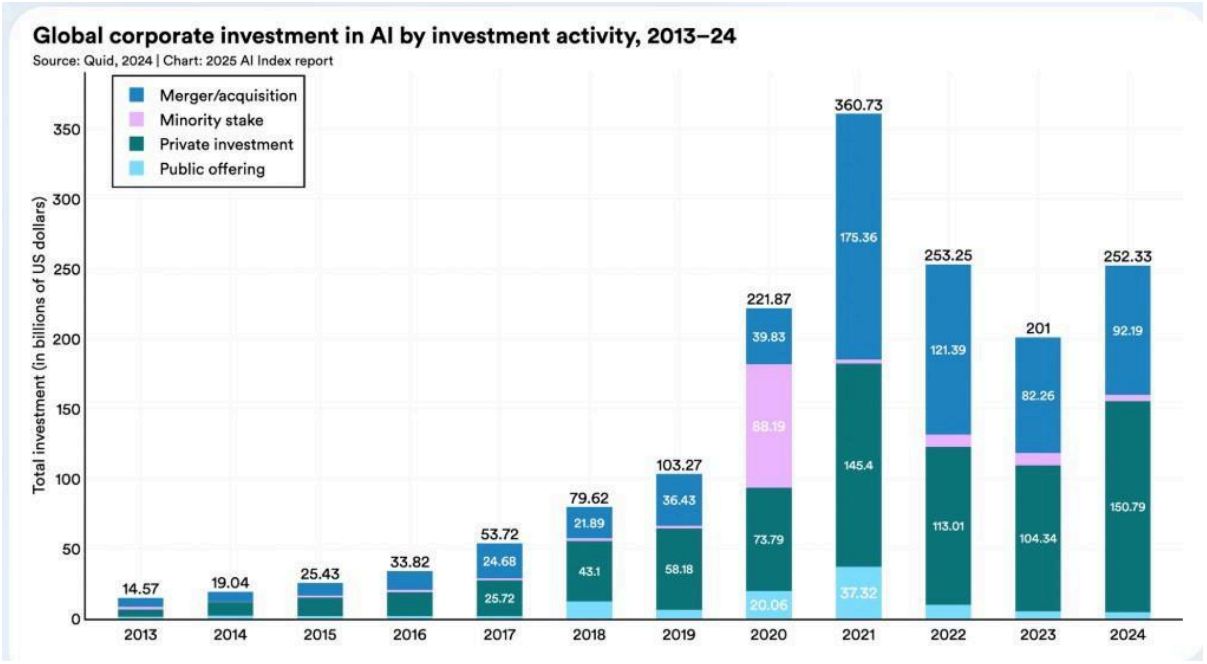
3.1 Artificial Intelligence as a General-Purpose Technology

Artificial Intelligence has become quite familiar as one of the general-purpose technologies (GPT)-the type of innovation that can revolutionize several economic fields.

Examples of GPTs in history include electricity, steam engine and the internet which have led to massive productivity improvement in industries. The increasing attitude towards AI does so because it allows improving automation, decision-making and data-driven innovation. Modern AI systems are capable of learning, identifying patterns, and adjusting to changing circumstances unlike traditional automation systems which execute the predetermined duties. Such abilities enable AI to move to a range of different industries such as predictive analytics, natural language processing, supply chain optimization, financial risk analysis, and customized marketing on a personal basis.

AI is a "force multiplier," by far enabling capabilities

According to various studies, organizations successfully integrating AI bring efficiencies in Operational efficiency, Data-driven decision-making, Customer engagement and personalization, Product and service innovation. While these advantages are enormous, the fundamental nature of AI will create critical questions regarding who benefits from its use.



Source: Quid, 2024 | Chart: 2025 AI Index report

3.2 Market Concentration and Competition Theory

Economic theory offers some theories that can be used in the study of the impact of new technologies on the market structure and competition. Market concentration is a process in which the industry output or revenue is dominated by a few firms. The concentration may help decrease the level of competition and provide leading companies with the opportunity to wield market power, which may impact the prices and innovation.

There are two economic concepts that are of particular significance to the adoption of AI.

Economies of Scale

Economies of scale are experienced when the cost of production reduces with the increase in the level of output. To create AI, one may need to invest in data infrastructure, computing capabilities, and research, which can be shared between millions of users by large companies. This allows big companies to build superior AI systems at a cheaper rate compared to their smaller rivals.

Barriers to Entry

Barriers to entry refer to challenges that show that new companies find it hard to enter a market. The AI technologies could raise new obstacles in case successful implementation presupposes:

1. large datasets
2. advanced computing infrastructure
3. highly specialized technical talent
4. significant financial investment

A clear illustration of this barrier is the market for AI chips. Nvidia currently dominates the supply of graphics processing units (GPUs) used to train and run AI models, holding an estimated 80 percent or more of the market on the strength of its CUDA software ecosystem, which most AI frameworks are built around. This near-monopoly on advanced computing infrastructure raises the cost of entry for any firm seeking to build large-scale AI systems. Google has emerged as the most credible challenger, developing its own Tensor

Processing Units (TPUs) to power its Gemini models and offering them to outside customers through Google Cloud. AI company Midjourney, for example, reported that shifting a portion of its workloads from Nvidia GPUs to Google TPUs cut its monthly compute costs from about 2.1 million dollars to 700,000 dollars, a reduction of roughly 65 percent. This shows how, even as chip access remains a major barrier to entry, competition between hardware providers such as Nvidia and Google is beginning to lower the cost of the computing infrastructure that smaller firms need in order to participate in the AI market.

Nvidia's position, however, is now being contested from several directions at once. Beyond Google's TPUs, Amazon has developed its own Inferentia chips for running models and Trainium chips for training them through Amazon Web Services, and has positioned them as lower-cost alternatives for frontier model developers such as Anthropic. AMD is also gaining ground with its Instinct accelerators, having secured large multi-gigawatt supply commitments from customers such as OpenAI. New types of chips are emerging as well. Language processing units (LPUs), pioneered by Groq, are built specifically for inference and use large pools of on-chip memory to generate tokens with very low latency. Incumbents are responding to this threat by absorbing it: in December 2025 Nvidia agreed to a licensing and talent deal with Groq, reported at about 20 billion dollars, and it plans to ship LPU-based accelerators alongside its own GPUs. Taken together, these developments suggest that the chip layer, long the clearest bottleneck in the AI supply chain, is finally opening up to competition, which should lower the cost of computing for smaller firms over time.

Concentration is now emerging at a different layer of the supply chain: power producers. AI is extremely power-hungry, and as chip supply becomes less of a constraint, access to large volumes of reliable electricity is becoming the next binding limit on how much AI can be built. The sources best suited to this demand, namely nuclear generation and grid-scale battery energy storage systems (BESS) that make intermittent renewable power dependable, are both very capital-intensive, and therefore prone to concentration. Only a small number of well-capitalized utilities, generators and hyperscalers can finance projects of this size, and the largest technology firms are already locking in supply through long-term

contracts, such as Microsoft's agreement with Constellation to restart the Three Mile Island Unit 1 reactor and Amazon's agreement with Talen Energy for up to 1.92 gigawatts from the Susquehanna nuclear plant. The economics also differ from those of chips. A chip is bought once, but electricity is a continuing, usage-based operating cost, so whoever controls generation influences the running cost of every model that is trained or served. This creates an interesting dynamic: even as the chip sector opens up, the power sector may become more concentrated, meaning that market power may be moving further up the supply chain rather than disappearing.

3.3 Data as a Strategic Economic Asset

In the 21st-century digital economy, data is not a by-product of business activity anymore it is an asset. Because of the blistering development of artificial intelligence,

organizations rely on data to get informed about patterns, help the organisations make decisions that maximise their designs and improve their overall performance. Each purchase you make, each click you do at a post on social media, each search query you use in your daily life is exponentially contributing to a reservoir of data which the various companies have access to be examined.

The strategic nature of data is that it provides a competitive advantage to those firms that can use it effectively. Firms that have access to significant meaningful datasets are more likely to be in a position to train more effective AI systems. As an example, e-commerce businesses study customers purchase history to send them the right products and banks monitor transaction history to identify any suspicious or fraudulent behavior. This causes, in the long run, a vicious cycle in which improved data feeds improved systems which lead to more users and further data.The quantity of data is not the only thing that counts, it also concerns the quality and usefulness. Timely and organized data will enable any business to respond faster to the changes in the market. It is in this way that data reflects the essence of synthesis that creates innovation, competition and long-term growth.

3.4 Platform Economies and Digital Dominance

Platform economies rely on the digital platform to connect different groups of people, such as the users and businesses and service providers, to one interface. The more individuals utilize these platforms, the stronger they become with what is referred to as network effects. The more people participate on a platform, the more its value will be generated that will also attract more users.

This may eventually lead to a situation of digital dominance, where few giant platforms dominate the majority of the market. Having access to a vast amount of data, the most advanced technologies, and unlimited funds, these companies will be able to constantly

improve their services and protect their status in the market at least at a price too high to afford many smaller players.

3.5 Previous Research on AI and Market Structure

The connection between the use of AI and market concentration has been a recent topic of scholarly and policy-making investigations. Several sources suggest that AI has the potential to complement the advantage of large corporations because they are the ones who could afford to develop AI at a large scale. A number of trends outlines just by research done by international organizations are:

1. large firms account for a disproportionate share of global AI investment
2. technology companies dominate AI research and development
3. AI talent is concentrated within a small number of major firms

Nevertheless, there are other researchers who also point to the fact that AI tools are becoming more accessible using cloud computing platforms and open-source AI frameworks. These advances enable small companies and new entrants to create new applications without having to create costly infrastructure.

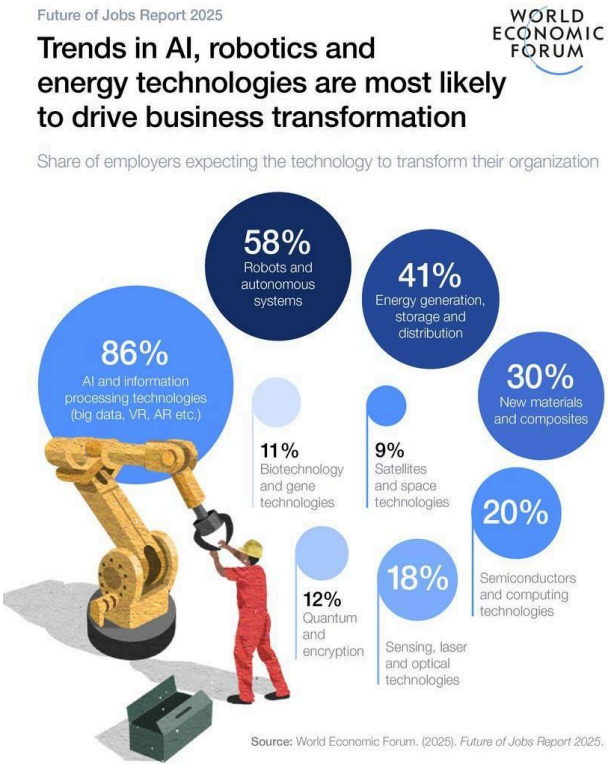
In general, the literature indicates that there is a dynamic yet ambiguous association between AI adoption and market concentration. Although AI can reinforce the role of powerful companies in certain industries, it can also open new ways of creation and competition based on the availability of technologies, employee skills, and laws.
The latter theoretical view offers the basis of analyzing the impact of AI adoption on firms of various scales in subsequent sections.

4. AI Infrastructure and Capabilities in Modern Firms

4.1 Data as a Foundational Resource

Data acts as the fundamental building block for anything from innovation to decision-making in the AI-driven economy. Similar to raw materials in traditional industries, data plays the role of the input for modern technologies. Organizations gather data from day-to-day activities, customer interactions, and digital channels, which is subsequently used to train and fine-tune AI algorithms.

Data is foundational because it continues to be used and reused, which is what makes data foundational. It enables businesses to understand trends, predict outcomes and optimize processes. Businesses with high-functioning data systems are equipped to make more strategic and timely decisions.

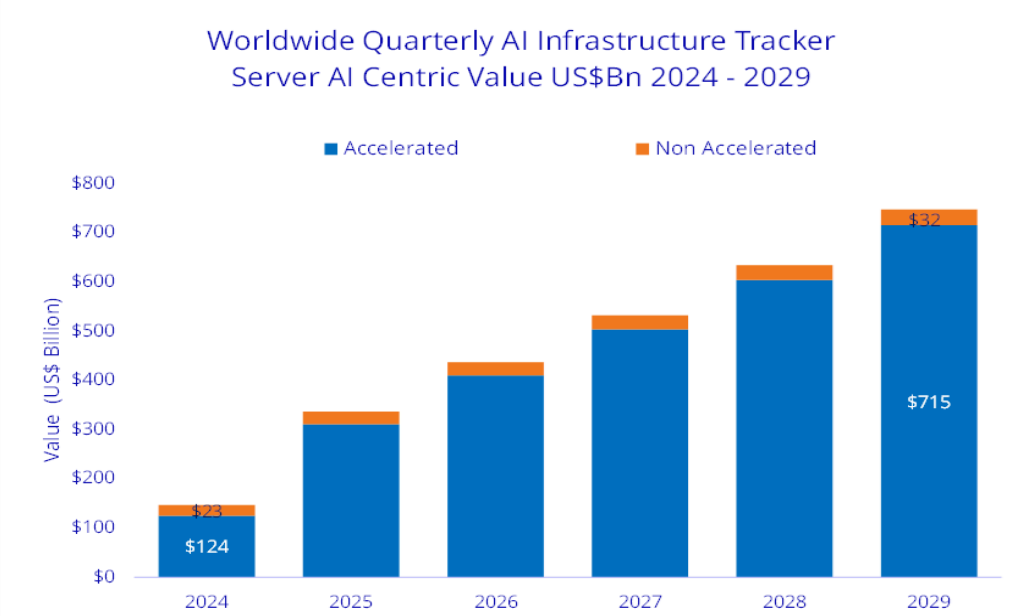


Source : World Economic Forum (2025), Future of jobs report 2025

4.2 Computing Infrastructure and Technological Investment

Much of the success surrounding the AI adoption depends on good computing infrastructure and continuous investment in technology. AI systems require high processing power in order to process large data sets and execute more complicated algorithms in a relatively short time. This includes specialized equipment such as high-end servers, graphics processing units (GPUs) and cloud computing systems. Nevertheless, companies cannot operate their AI capabilities without this important infrastructure.

And many large companies usually spend very high on constructing their individual data centers and technological ecosystems that will allow them to scale which enables them to reduce long-term expenses. The third-party cloud services provide the equalizing of access to costly supercomputing machines that allow smaller companies to utilize this technology, but at the cost of apparently unavoidable monthly payments and bottlenecks to control their own activities. It is therefore important that organizations should do whatever they can to implement and utilize the capabilities of advanced computing which is a significant aspect of which is investment in their computing infrastructure.



Source : IDC (International Data Corporation) **report 2025**

4.3 Corporate “AI Studios” and Internal Development

Large organizations are now setting up special-purpose A.I. studios to organize their efforts. These units are pulling together data scientists, engineers and domain experts in one team that is charged with creating and developing A.I. solutions that would be unique to the company. Rather than connecting with third-party tools, companies build their system that is natural and works with their data and processes.

The mantra of this approach is to make use of the internal development, where there are chances that companies can evaluate and experiment with innovative concepts. It also allows them to exert more control over their technology and reduce reliance on third-party platforms. Gradually, these investments in turning companies towards artificial intelligence help develop a powerful internal capability that would enable them to incorporate AI on an organizational level and sustain competitive advantage over other players.

4.4 Talent Concentration and Specialized Expertise

Technical talent is also a highly skilled talent that is required to achieve successful implementation of AI. To develop AI systems, one needs to have the knowledge in the following areas:

1. machine learning engineering
2. data science
3. software development
4. AI ethics and governance
5. limited financial resources
6. smaller research environments
7. competition from major technology companies

It follows that a good number of SMEs are relying on outside consultants or cloud-based AI solutions to deploy AI solutions.

4.5 Security and Enterprise AI Systems

With the introduction of AI into the main processes, the issues of data security and the protection of intellectual property have increased. The massive corporations can mitigate these threats by implementing large-scale AI-based solutions to ensure the safety of confidential data.

Such systems normally consist of Private AI models hosted within secure corporate networks, Enterprise AI subscriptions with strict data protection policies, Internal governance rules regulating AI usage.

These settings do not allow the proprietary information to be revealed to the general AI systems.

A more recent revealing incident occurred in 2023, when engineers at Samsung uploaded sensitive source code to a public AI-based chat bot by accident while troubleshooting software. The incident also raised concerns about potential data leaks, prompting Samsung to restrict the use of external generative AI by employees and strengthen governance guidelines for internal AI systems.

The case shows how securing AI infrastructure is the foundation to protect corporate data. Data resources and computing infrastructure, specific talent, as well as safe AI environments are the main keys for successful organizational adoption of AI technologies; ó four factors agreed upon by most variants of adoption frameworks. Given that large corporations are likely to have these resources at a larger level, this allows them to be more inclined towards leveraging AI and building on their competitive edges.

5. AI and Market Concentration: Advantages for Large Firms

5.1 Economies of Scale in AI Development

The availability of economies of scale in AI development and deployment could be the reason why such adoption is more beneficial to large firms. Developing advanced AI systems is a costly process in terms of data infrastructure, computing resources, research, and expert talent. When they are developed though, the systems can be used with millions of users at a fairly cheap marginal cost.

The big corporations are well placed to take advantage of this dynamic since they are large scale operations that are able to apportion development cost to vast customer bases and business units. This allows them to use AI on such areas as:

1. Customer personalization and recommendation systems
2. Supply chain optimization
3. Fraud detection and risk analysis
4. Predictive maintenance and operational efficiency

An example is the use of recommendation engines based on AI which analyze a massive set of interactions with customers to recommend useful products, which are common in large e-commerce platforms. These systems boost customer interaction and sales, which enhances the benefits of companies capable of running AI on a massive scale.

5.2 Data Network Effects and Competitive Advantage

The other significant cause of market concentration is the availability of data network effects. The AI algorithms become better when they process larger volumes of data. Companies that have many users produce more data and hence the model they use can become more effective and precise.

This forms a vicious cycle:

1. A firm attracts a large number of users.
2. More users generate additional data.
3. Larger datasets improve AI model performance.
4. Better services attract even more users.

Example concept:

Users → Data Collection → Improved AI Models → Better Services → More Users

Since the large-scale digital platforms like search engines, social media networks, and e-commerce marketplaces can collect data continuously, companies with such platforms gain significantly with this dynamic, as they can more quickly improve AI systems compared to smaller rivals.

5.3 Integration of AI Across Corporate Ecosystems

Another benefit of large companies using AI technologies is that they are applicable to several business processes. Instead of applying individual tools, most corporations implement AI over the whole organizational ecosystems.

Examples of typical uses are Marketing analytics and customer behavior analysis, Supply chain and logistics optimization, Product development and research, Customer support automation, Financial forecasting and strategic planning.

The use of AI in all departments will enable firms to develop data-driven operations, which constantly produce insights and enhance decision-making.

Business Function	**AI Application**

Marketing	Customer segmentation and targeted advertising
Supply Chain	Demand forecasting and logistics optimization
Finance	Fraud detection and financial risk analysis
Customer Service	AI-powered chatbots and virtual assistants
Product Development	Predictive analytics and user insights

This table illustrates how AI can enhance operations across different organizational units.

5.4 Secure AI Infrastructure and Data Protection

Another benefit of AI adoption to big corporations is their data protection and management. With companies incorporating AI in their most important processes, there is a growing importance in protecting proprietary information, including source code, algorithms, and internal data.

In order to mitigate these risks, most companies implement enterprise AI environments that entail:

1. Private AI systems hosted within corporate networks
2. Enterprise AI subscriptions with strict data privacy agreements
3. Internal policies governing employee use of AI tools

One famous example was in 2023 when Samsung engineers uploaded deliberative source code to one of the public AI chatbots by mistake when trying to debug software. The case demonstrated the danger of sensitive information on the usage of the public AI tools.

Samsung responded by limiting access to such platforms by its employees and enhancing internal policies of AI governance.

5.5 Investment Capacity and Strategic AI Development

Lastly, big companies tend to have the fiscal ability to allocate substantial resources to long-term artificial intelligence research and development. Technology giants are willing to spend billions of dollars every year on:

1. developing proprietary AI models
2. acquiring promising AI startups
3. recruiting leading AI researchers
4. building advanced computing infrastructure

Such investments allow big companies to stay ahead of technology and increase the distance between them and smaller organizations that have small research funds.
In general, the economies of scale, data network effects, integration as an ecosystem, secure infrastructure, and massive investment capabilities are some of the factors that give large companies a considerable edge in the use of AI. These benefits are likely to increase market concentration in some industries over time as AI becomes more and more central to business operations.

6. AI as a Market Equalizer: Opportunities for Smaller Firms

6.1 The Mid-Market Growth Revolution

Although AI can empower the large corporations, it may equally empower smaller and mid-sized companies. The development of cloud computing and AI platforms has

ensured that the most potent analytical tools can be offered to organizations that did not have the capability to develop them in the past.

In the case of many mid-sized companies, the introduction of AI has helped them to improve Market analysis and forecasting, Customer behavior insights, Operational optimization, Automated decision support.

Such capabilities enable small firms to become more efficient and embrace the use of data in decision-making to enable them to be more competitive with other bigger firms.

6.2 Cloud-Based AI Platforms and AI-as-a-Service

One of the factors that have made such a shift possible is the emergence of AI-as-a-Service (AIaaS) platforms. Large cloud providers currently can provide AI tools that can be integrated by businesses without the need to create expensive infrastructure. These services include Natural language processing, Image and speech recognition, Predictive analytics, Customer interaction automation.

Instead of developing their own models, smaller firms can access these capabilities through cloud platforms, significantly reducing cost and complexity.

Provider	**Example AI Services**
Amazon Web Services	Machine learning tools, predictive analytics
Microsoft Azure	AI copilots, language models
Google Cloud	Data analytics and machine learning services
OpenAI APIs	Large language models and generative AI tools

6.3 Startup Innovation and Entrepreneurial Opportunities

Startups and entrepreneurial firms have also been given an opportunity through AI. Most startups develop AI-powered products without necessarily spending a lot of money on internal systems, building them instead on existing cloud infrastructure and open-source frameworks.

These companies usually specialize or target niche markets such as AI-driven healthcare diagnostics, financial technology (fintech) platforms, AI-powered marketing tools, industry-specific analytics solutions.
Because startups are more agile, they can experiment quickly and adapt to changing market demands.

This shift is already visible in practice. A generation of young AI-native companies has been able to reach billion-dollar valuations with only a handful of employees, without the layered departmental structures, such as separate teams for engineering, sales, marketing and operations, that used to be required for a company to scale. Anysphere, the company behind the AI coding assistant Cursor, reportedly crossed 500 million dollars in annual recurring revenue in 2025 with fewer than 50 employees, while the AI image-generation company Midjourney reached around 200 million dollars in annual recurring revenue with only about 10 employees and no external venture funding. By contrast, earlier generations of technology companies, such as Salesforce, needed years of fundraising and much larger teams to reach comparable valuations. This contrast between lean, AI-powered startups and traditionally structured large companies illustrates how AI can lower the organizational and financial barriers to entrepreneurship, allowing small teams to compete with, and in some cases outpace, much larger incumbents.

6.4 Agility and Niche Market Specialization

Organizational agility is also an advantage to smaller firms. They are able to embrace new technology within a very short period as compared to large corporations that have

complex structures and thus are able to respond to changes in the market at a faster rate. Instead of competing in general, small companies tend to find a specific use of AI, including personalized services in niche markets, specialized analytics tools, automation of internal workflows.

6.5 Open-Source AI and Democratization of Technology

One of the major contributors has been open-source AI, which has enabled high tech to become much more owned. Previously, creating such AI systems used to be expensive in terms of money and expertise, and only bigger organizations could afford it. However, since the open source innovations have eliminated the necessity of expensive power tools, developers, startups and even individuals are now able to employ candid solutions. It has triggered innovation and experimentation in industries. As a result, smaller firms are currently using these common resources to better compete with larger firms. The access to the technological progress is also promoted by open-source AI and reduces the barriers of entry in terms of culture and finances into the space and enables broader participation.

This dynamic is visible in the large language model market. Open-source models developed in China, such as DeepSeek, have narrowed the gap with, and on some benchmarks matched, leading proprietary models from companies such as OpenAI and Anthropic, whose Claude models had previously been viewed as among the most capable systems available. Because Chinese AI labs have released many of their models' weights openly, developers and smaller firms worldwide can download, modify and deploy these systems at a fraction of the cost of building a comparable proprietary model. This has given China a notable advantage in open-source AI, reinforcing the broader point that open-source development is helping to level the playing field between large, well-funded AI labs and smaller or newer entrants.

More recent releases have reinforced this pattern. Kimi K3 from Moonshot AI, a mixture-of-experts model with about 2.8 trillion parameters, and Qwen 3.8 from Alibaba,

with about 2.4 trillion parameters and open weights released under the Apache 2.0 licence, are new-generation Chinese models that now exceed DeepSeek in capability. Their developers position them at or near the frontier, although Moonshot itself acknowledges that K3 still trails the most capable proprietary systems, such as Anthropic's Claude Fable 5 and OpenAI's GPT-5.6, on overall performance. Because the weights are open, firms can download and adapt these models at low cost. However, models of this size still need large clusters of accelerators to run, which ties open-weight AI back to the constraints of compute and power discussed above: open models lower the barrier to the model layer, but not necessarily to the infrastructure beneath it.

7. SME Challenges and Implementation Barriers

7.1 Implementation Gap, Cost, and Expertise Barriers

As more and more AI tools become available, many small and medium-sized enterprises are not able to successfully implement them. Another huge gap is the gap in implementation - companies may integrate some AI in individual areas of their business, but they are unable to make it a full-fledged aspect of their business. These fragmented practices usually end up giving fragmented systems which do not offer the entire benefits.Another barrier of importance is cost. Smaller firms may find it difficult to manage costs related to subscriptions and data management and system integration even with cloud-based solutions. Also, no experience in the field exists to design and support AI systems. Therefore, majority of firms hire external professionals that only increase the price further and restrict building long-term capabilities.

7.2 Dependence on Large Technology Platforms

SMEs are the primary users of key technology platforms to access AI and computing resources. Cloud computing services and AI service platforms can allow the enterprise to deploy more sophisticated technologies without the need to develop its infrastructure. This has increased the accessibility of systems but has also developed a certain dependency on the platform providers.

It can limit the autonomy of a firm in certain aspects of data, pricing, and technology decisions. Business may be directly affected by changes in the policies, costs or service features of a platform. Moreover, the level of customization can be reduced as compared to in-house systems. However, with time, this dependence may cause small businesses to become susceptible. Larger companies will have more control, stability and they will be able to innovate on proprietary infrastructure which is not accessible to many players in the industry.

7.3 Integration Challenges and Legacy Systems

Implementing AI in business is hardly an exercise of adopting tools. Most companies and especially small and medium-sized companies have their legacy systems which were not initially configured to communicate with new technologies. However, they are old-fashioned and, therefore, they may be difficult to upgrade or connect with AI applications leading to compatibility and efficiency problems.

In order to successfully integrate AI into their data systems, firms may need to re-organize them, standardize rules and invest in new infrastructure. Much is needed in terms of time, technical know-how and economic means that are not always on-hand. This could lead to delays or failure in achieving the potential of AI in organizations. The main way to successful digital transformation is to identify and overcome these challenges.

7.4 Security and Data Privacy Concerns

Another issue that comes up with AI adoption is the issue of data security and the protection of intellectual property. The unscrupulous use of public AI tools by SMEs exposes such companies to sensitive details unless they are adequately secured.

By way of illustration, posting of internal documents or code to the open AI systems can result in leakage of data.

However, a significant example was in 2023 when Samsung engineers posted confidential source code to an open AI chatbot, reminding of the dangers of the misuse of AI. Whereas big companies reacted by installing safe AI settings, SMEs might not be able to afford it.

In general, even with rising accessibility, business barriers to SMEs are structural such as a lack of implementation, cost limitations, talent, platform reliance, integration difficulties, and information security risks. Those aspects can restrict efficient adoption of AI and can be the reason of unequal competitive results, which tend to advantage bigger companies.

8. Workforce Transformation and Employment Effects

8.1 Changing Nature of Work in the AI Era

AI is transforming business processes as well as what work is like. The tasks that used to be done by humans such as data handling, recognition of patterns and routine decision-making can now be done by AI systems.

AI is not a replacement of workers but rather, it is aimed at enhancing human abilities through the automation of repetitive jobs. This enables the employees to concentrate on the strategic, creative and problem solving.

8.2 The Flattening of Organizational Structures and Productivity Gains

AI is slowly forcing a change in the way organizations will be structured and work managed. Monitoring, reporting and analysis can be carried out by AI systems; hence,

removing three areas which previously required numerous layers of supervision and coordination. This shift makes it easier to have flatter structures, whereby decision makers are more rapid and where all communication identifies line staff more specifically.

Fewer layers will guarantee effective communication and processes. At the same time, AI tools enhance the efficiency of employees by automatizing repetitive work and supplementing complex analysis. The employees are able to spend more time on strategic and creative work as opposed to repetitive work. This change improves organizational design thus making the organization more efficient in addition to better utilization of human resource.

8.3 Emergence of Hybrid Human–AI Teams

As AI is introduced into the work setting, there has begun to arise a new phenomenon known as hybrid human-AI teams, wherein technology is tasked to assist employees, but not replace them. In such settings, AI systems work on routine tasks, including data analysis, pattern recognition, and simple decision support, whereas humans perform in terms of judgment, creativity, and problem-solving.This type of collaboration allows organizations to use the power of AI speed and efficiency, combined with human instinct and adaptability. The results can be generated by AI tools, propose solutions and so on, but employees review them and optimize it until a decision is taken. This makes the work smooth and saves a lot of time.

8.4 Shifts in Labor Demand and Skill Requirements

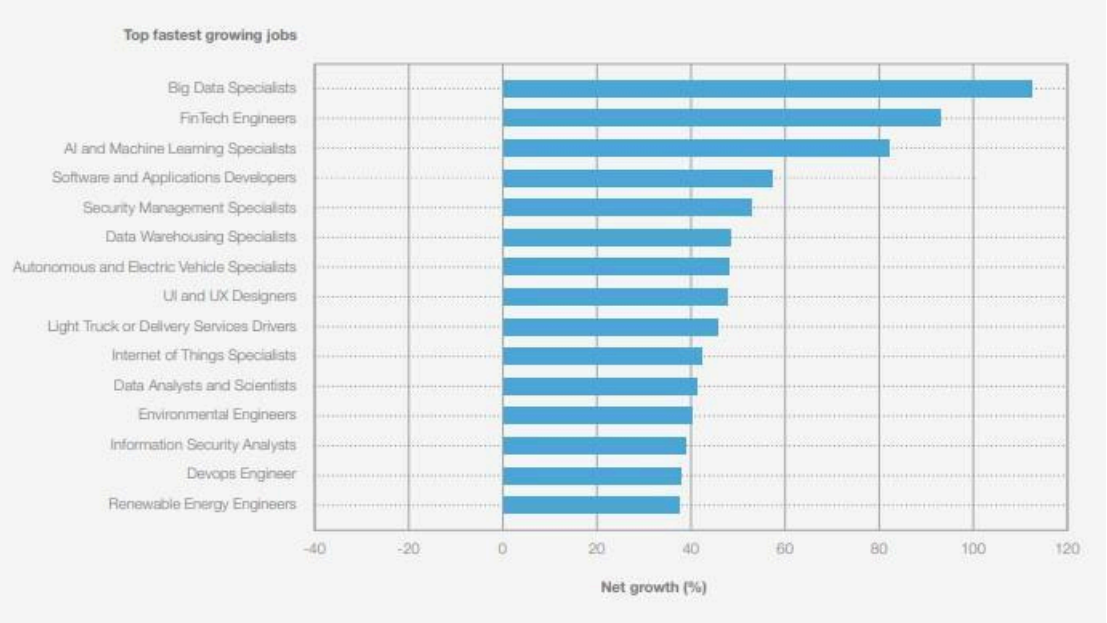
The use of AI is also transforming labour market needs. Automation of routine tasks has made more and more appreciated skills in organizations like data literacy and analysis, AI tool usage and prompt engineering, critical thinking and decision-making, creative problem-solving

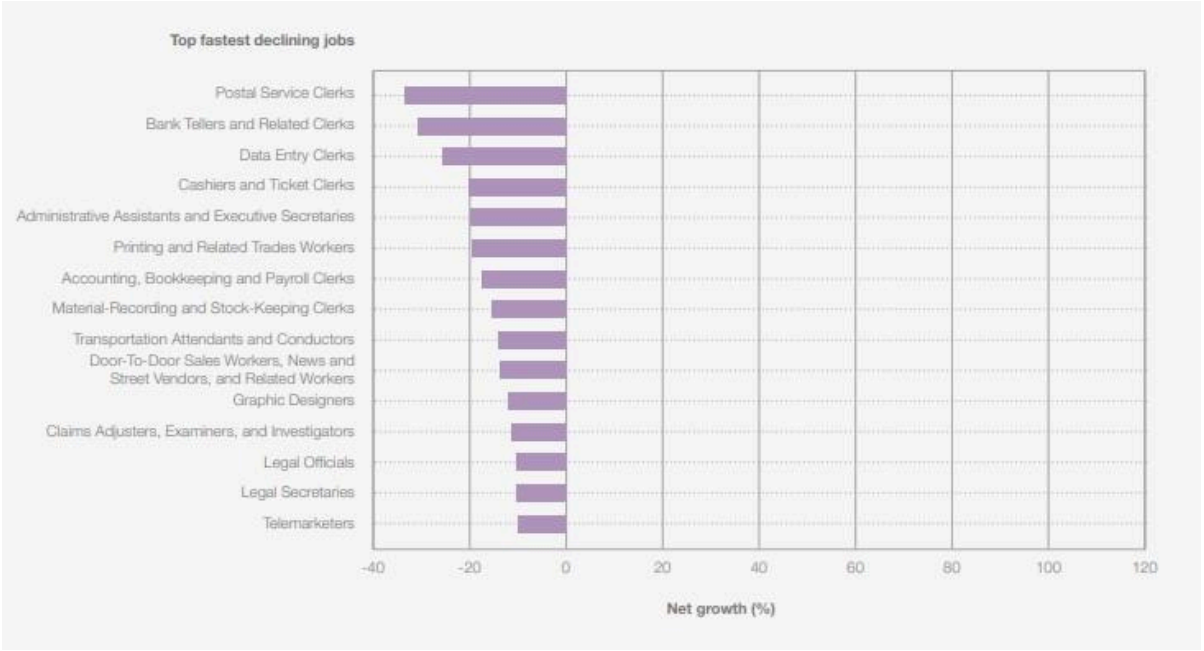
Simultaneously, the demand in the positions when repetitive jobs are required, including data entry and simple management, might decrease.

The given shift makes reskilling and workforce training programs crucial.

Emerging Skills	**Declining Tasks**
Data analysis	Manual data entry
AI tool management	Routine administrative work
Strategic decision-making	Basic reporting
Creative problem solving	Repetitive processing

All in all, AI is causing radical work designs, productivity, and skill needs. Although it contributes to increased efficiency and the introduction of new opportunities, it also brings several challenges concerning job displacement and workforce adaptation, so reskilling should be one of the most important priorities in AI-driven economies.





Source : **World Economic Forum (Future of Jobs Report 2025)** Fastest-growing and fastest-declining jobs, 2025-2030 Source World Economic Forum, Future of Jobs Survey 2024. Top jobs by fastest net growth and net decline, projected by surveyed employers

9. AI Literacy and Corporate Workforce Training

9.1 The Growing Importance of AI Literacy

With more organizations integrating Artificial Intelligence into their business processes, organizations are becoming aware of the need to have AI literate employees. AI literacy can be defined as the capacity of a person to comprehend the use of AI systems, communicate with them, and properly apply AI systems in the workplace.

Before, technical teams, which were a select few, used advanced technologies. But nowadays, AI tools, in particular, generative AI systems and AI copilots, are available to the employees of various departments. Consequently, employees in other industries like

marketing, finance, operations, and product development are now being required to learn how to utilize AI tools in a responsible and efficient manner.

9.2 Corporate Upskilling and Reskilling Programs

The programs are aimed at assisting workers in acquiring technical and non-technical skills that are necessary to be effective in cooperation with AI systems.
Typical AI training programs by corporations include internal training courses on AI fundamentals, workshops on using AI-powered productivity tools, data analytics and machine learning education programs, certification programs for employees working with AI systems. Such initiatives enable businesses to slowly change their staff as they also keep their staffs competent to adapt to the emerging technologies.

In most instances, organizations have been incorporating AI training into more general digital transformation plans, as they have understood that technological change necessitates the improvement of infrastructure, as well as the reorientation of the workforce.

Company	**AI Workforce Initiative**
Amazon	AI and machine learning training programs for employees
Microsoft	AI skills development courses and internal learning platforms
IBM	AI education and professional certification programs
Google	Internal AI training and developer learning resources

This table highlights how major technology companies are investing in AI-related workforce development.

9.3 Personalized Learning and AI-Based Training Systems

Interestingly, even AI itself is utilized to assist in training and educating of employees more often. Nowadays, there are AI-based learning platforms in some organizations which, according to the needs of individual employees, customize the training content.
Such systems will be able to process the data of employee performance and suggest specific training programs, which will concentrate on the areas of need. As an illustration, the employee that has good strategic thinking ability but lacks experience in data analysis could be offered specific training modules dedicated to the subject of analytics and data interpretation.

The AI-based learning systems have the potential to offer personalized training pathways, adaptive learning modules, real-time performance feedback, automated skill assessments. These systems enable organizations to build workforce capabilities in a more efficient way, besides making sure employees are trained in areas that are relevant to them.

Example concept:

Employee Results Data - Artificial Intelligence Learning Student - Individualized Training - Skill improvement. Such a scheme can be used to demonstrate how AI can be used to facilitate the development of workforce in organizations.

9.4 Encouraging Experimentation and AI Adoption

In addition to a formal training program, some organizations are also practicing, via informal means, the use of AI in the day-to-day activities of employees. Firms are moving to understand that when it comes to AI, the best applications can be identified through on-the-job experimentation and not top-down application.

To facilitate this strategy, there are initiatives that are introduced in some organizations like dedicated experimentation time for employees, internal AI innovation

challenges or hackathons, collaborative knowledge-sharing platforms. Such efforts enable the employees to find new applications of AI in their workflows, enhance productivity, and become innovative across departments.

Experimentation is also a method to encourage the use of AI by organizations to identify how it could be practically used in ways that were not initially conceived during the initial implementation planning.

9.5 Evaluating Human Skills in an AI-Enabled Workplace

With AIs systems becoming more and more efficient at undertaking more analytical duties, organizations are also reevaluating their approach to assessing human capabilities and skills. Other companies have started to establish AI-free testing conditions when ranking the capabilities of employees in aspects like problem-solving, reasoning and critical thinking.

10. Ground-Level Workflow Transformation

10.1 From Drafting to Editing

The use of AI is shifting employee mindset towards the day-to-day work. Previously, work demanded the manual creation of tasks, the collection of a lot of data. Using generative AI, the employees are now starting with AI drafts which they proofread, edit and authenticate.

This changes the content creation to the editing and decision-making role. Common use cases include business report generation, research summarization, email and presentation drafting, initial coding solutions.

Therefore, critical thinking, understanding of the situation and judgment has become the human value more and more.

10.2 Emergence of Agentic AI Workflows

In addition to the assistant systems, organizations are also embracing agentic artificial intelligence systems that are capable of acquiring multi-step tasks with a minimum amount of human intervention. These systems are integrated with features of analyzing data, decision logic and automation.

Examples include financial data analysis, supply chain optimization, legal document processing, automated procurement systems.

The jobs that used to take hours and a number of people can now be achieved in minutes and this has enhanced efficiency and minimized delays.

Example:

User Request - Artificial Intelligence Analysis - Decision Logic - Implementation - Human Control.

10.3 Productivity Improvements

AI-based workflows can enhance productivity to a large extent, as the presence of the system helps to automate manual operations and speed up the processing of information.

Key improvements include:

1. faster research and data retrieval
2. automated analysis and visualization
3. rapid content generation
4. improved customer service response times

For instance, chatbots handle routine queries, allowing human agents to focus on complex cases, while analysts use AI tools to process large datasets quickly.

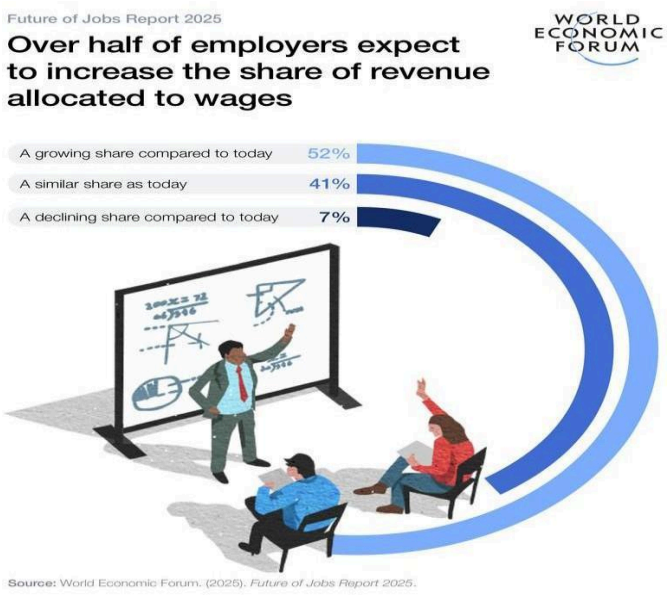
10.4 AI Skill Wage Premium

The increasing adoption of AI has positively impacted the creation of a wage premium towards AI related skills. Workers that are able to utilize AI tools successfully are likely to become productive and valuable.

Key skills include:

1. AI tool proficiency
2. data analysis
3. AI workflow management
4. strategic application of AI insights

Employees who possess such abilities are likely to have better pay and chances than those who do not have AI skills.



source: World Economic Forum.

10.5 Evolving Roles and Responsibilities

AI is transforming work processes where workers are expected to integrate technical knowledge, analysis and monitoring.

The common job demands today are monitoring and validating AI outputs, interpreting AI-driven insights, designing AI-integrated workflows, ensuring ethical AI usage.

Traditional Role	**AI-Augmented Role**
Data entry clerk	Data analyst using AI
Customer support agent	AI-assisted support specialist
Marketing analyst	AI-driven strategist
Software developer	AI-assisted developer

On the whole, AI is changing the working process because it shifts work not to its manual performance but to its supervision and optimization. This enables the employees to devote their attention to strategic thinking, creativity, and the process of decision-making, which strengthens the need of human-AI partnership.

11. Markets with Limited AI Impact

11.1 Uneven Adoption Across Industries

Despite the fact that AI is very transformative, its effects are not distributed equally in the industries. Such sectors that have adopted data vigorously have been in the data-driven sector, whereas other sectors have not been much impacted.

Some of the critical forces that affect adoption are:

1. availability of digital data
2. automation potential of core tasks
3. regulatory constraints
4. dependence on human interaction

Industries that deal with structured data are the most successful, and those that are more likely to use AI at a slower rate are industries that require physical efforts, human introspection, or regulation.

11.2 Labor-Intensive and Physical Industries

Physically-focused industries tend to have a low level of AI influence since the context in which these industries operate is complicated and hard to automate.

Examples include:

1. construction
2. agriculture
3. manual manufacturing
4. repair and maintenance services

Although AI is capable of assisting activities such as predictive maintenance, fundamental operations will not be done automatically because of human involvement and decision-making.

11.3 Highly Regulated Industries

Industries where regulation is high are more cautious to adopt AI, including healthcare, aviation, and pharmaceuticals, because of the safety and compliance rules. Though AI can assist in analyzing data and performing administrative roles, complete automation cannot be fully realized due to the requirement to have human control and be approved by the authorities.

Industry	**Constraint**	**Impact**
Healthcare	Patient safety regulations	Limited automation
Aviation	Safety certification	Human oversight required
Pharmaceuticals	Clinical approvals	Slower AI adoption

11.4 Local Service-Based Businesses

Personal relations and trust are very important to local businesses, and AI will not affect the essence of services.

Examples include:

1. restaurants and cafes
2. salons and personal services
3. local repair businesses
4. small retail shops

AI can make the work more productive (e.g., payment, inventory), whereas the competition is still based on the quality of the services and relations with customers.

11.5 Creative and Craft-Based Industries and Market Implications

It is also important to mention that creative and craft-based careers (e.g. art, design and other hand-made products, crafts) are comparatively less at risk of a swift AI adoption than the digital sector. The industries are mostly reliant on personal invention, originality and delicacy, which are difficult to fully how technology. As a result, it can be argued that AI is an assistance rather than a center of attention in these sectors.

These industries can also be assisted by AI in terms of design concepts, marketing and online presence. It can allow small creators to access more people and simplify the process. In the meantime, the traditional artisans may be squeezed by increasing digital competition. Concisely, the value of core creativity remains human possibility, but AI is gradually shifting the rules of the game in which such industries operate and compete.

12. Risks and Drawbacks of AI Adoption

12.1 Market Power Concentration

Although AI has enormous advantages, it can also enhance the market concentration. The cost of AI systems, particularly the need to invest heavily in data, infrastructure, and expertise makes these systems beneficial to large companies that other smaller companies cannot easily match.

Companies that invest in AI on a large scale have the ability to achieve more efficiency, provide more customized services, and increase users- therefore, winner-takes-most markets in online markets.

12.2 Data Monopolies and Information Asymmetry

Data is an important competitive edge of AI systems since it is a critical resource in the system. Big Data is generated on large platforms by:

1. search activity
2. online transactions
3. social media interactions
4. user behavior tracking

This allows them to keep on improving their models and establish a feedback loop which makes their position in the market stronger.

Smooth sailing in the creation of equally efficient AI systems is a challenge to smaller firms that do not have similar data.

Example:

More Users - More Data - Better AI - Stronger Market Position - More Users.

12.3 Barriers to Entry

Basically, barriers to entry are the barriers that hinder new companies to enter the industry. The barriers to entry have been further intensified in most areas with AI being a data hungry technology by nature. The development of useful AI systems also often involves large datasets, advanced computing infrastructure and expertise, potentially costly or inaccessible to new or small companies.

In addition, incumbents enjoy economies of scale and network effects on their data to offer strong obstacles to potential entrants. These are able to discourage competition, and they might also deter innovation. It means that there is a possibility that the market will become more concentrated in AI-intensive industries due to the high barriers to entry.

12.4 Job Displacement, Bias, and Ethical Risks

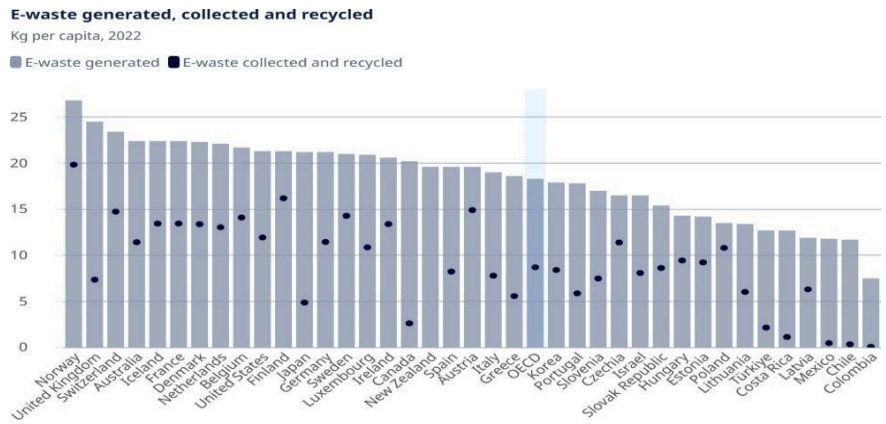
With the growing popularity of AI, such issues as job displacement, bias, and ethical issues have become the subjects of serious concerns. Automation has a risk of eliminating some routine and repetitive labor making some jobs uncertain as they may be reduced in favor of machines performing the tasks that machines can perform. Even in the cases when new opportunities appear, it can be difficult to make the transition without the appropriate reskilling and support.

The other substantive issue is associated with bias in AI systems. Since these systems are trained on existing data they can unintentionally reproduce and reproduce social or historical inequities. It may turn out to strike people differently, say, when you are seeking employment or borrowing funds, say. Data privacy, transparency and accountability also have ethical risks. These are some of the challenges that AI should address in order to use it in a responsible and ethical manner.

12.5 Environmental Impact

It is also costly in terms of computing power and energy usage to train large AI models, which makes them unsustainable to the environment.

The attempts at impact minimization include energy-efficient algorithms, hardware optimization, use of renewable energy in data centers.



E-waste: all items of electrical and electronic equipment that have been discarded as waste without the intent of re-use.

Source: OECD (2024), OECD Digital Economy Outlook 2024 (Volume 2).

12.6 Data Security and Intellectual Property Risks

There are also risks of data security that are brought about by AI tools, particularly in cases where the employees are using public platforms. Delicate data (source code or business data) can be disclosed without intent.

In 2023 an interesting incident happened when Samsung engineers posted company confidential code to a public AI chatbot, reinforcing company policies on AI.
In general, AI impetus is innovation but it brings about challenges regarding market concentration, data dominance, job disruption, ethics, environmental aspects and data safety. These challenges need to be met to make a sustainable and inclusive AI-driven growth achievable.

13. Policy and Regulatory Implications

13.1 The Need for Balanced AI Governance

With AI taking center stage in economic systems, policy makers should make sure that it encourages innovation but should not lead to unfair competition and safeguard the interests of the people.

With AI taking center stage in economic systems, policy makers should make sure that it encourages innovation but should not lead to unfair competition and safeguard the interests of the people.

Key concerns include:

- market concentration
- data confidentiality and security.
- labor market disruption
- ethical AI use

Governance requires both governments and industry and the research institutions to make a concerted effort on coming up with flexible policies.

13.2 Antitrust Regulation and Market Competition

Antitrust regulation is a significant part of competition in the markets and digital economies affected by AI. The threat of market dominance is that the small competitors will have little space since the large companies will face an advantage in terms of data, scale and advanced infrastructure. Antitrust are statutes and policies designed in order to inhibit monopoly, assure competition, and safeguard the consumer.

Regulators have been presented with new challenges based on AI such as concentration of data, network effects and dominance of platforms that can only deepen the leading firm positions. The contemporary antitrust must adapt to this digital reality. A balance should be created and therefore effective regulation should be ensured without suffocating innovation as we require established firms and emerging firms in the imminent dynamic market.

13.3 Data Governance and Access Policies

Data Governance and Access Policies: There should be data governance and access policies to enable data access, sharing, and utilization to be conducted in a responsible, secure, and efficient manner to an AI-based economy. These policies delineate the methods for data collection, storage, sharing, and protection both within and between organizations.

Governance frameworks ensure that data quality is maintained, misusage is avoided and compliance to legal and ethical standards are followed.

On a similar note, access policies stipulate who can access data and on what conditions. This is because sufficient controls are necessary to protect the sensitive information, but overly restrictive access can limit innovation and collaboration in business. It must be a balance, and must respect privacy and security and permit fair access to research, competition, and technological progress. Trust, transparency, and sustainable use of data resources is based on good data governance.

13.4 Ethical Governance, Innovation Support, and International Coordination

The growing involvement of AI in industries has necessitated the need to regulate its development in a morally responsible way. To make sure that AI systems are being used and applied accordingly, guidelines should be highly precise in terms of such aspects as: data privacy, bias and transparency. Instead, governments and other institutions are required to encourage innovation by ensuring that they have good policies to support research, investment and technological development without crippling the sector by overregulating it through bureaucracy.

The regulation is a balancing act up to the very end; innovation is a compass. Besides, the global aspect plays a crucial role in this case: AI technologies have no borders. International cooperation can assist us to create standard practices, exchange the best practices, and address cross-national challenges. These efforts collaborate with each other to ensure that AI development is fair, inclusive, and beneficial to the society overall.

14. Conclusion

The concept of Artificial Intelligence has become one of the most effective technologies that define the current economic activity. In different sectors, AI systems have become more commonly applied to process large datasets, automate various processes, support decision-making, and increase the efficiency of operations. With the implementation of these technologies in organizations, questions of major concern are how it affects competition in the market, transformation of the workforce, and the allocation of economic benefits to firms of varying sizes.

This paper has investigated the role of AI technology application in market concentration in favour of big businesses at the expense of small ones. The discussion indicates that big companies tend to have numerous organizational advantages that allow them to implement AI in a more successful manner. These advantages include:

1. access to extensive proprietary datasets
2. advanced computing infrastructure and AI development resources
3. large-scale financial investments in research and development
4. ability to attract highly skilled AI talent

Due to the ability of AI systems to become stronger as they have an increased supply of data and computing power, companies that possess these benefits can gain market strength in the long term.

The companies which have such advantages can become stronger in the market in the long run because of the potential of the AI systems to improve as this system has more data and more computing capacity.

The fact that data network effect and economies of scale have been playing out over years will only be able to solidify that dominance and provide an even greater edge to corporations that are atop massive digital platforms.

The study, however, also notes that AI technologies cannot positively relate to big businesses in their entirety. There are certain technological barriers that have been reduced to a significant extent, with the advent of cloud-based AI platforms, open source machine learning frameworks and AI-as-a-service tools. These advancements have also been able to give power to the smaller companies and startups that would have only dreamed of having access to certain high features that could only be provided by mammoth organizations. In numerous situations, smaller companies may use organizational agility and niche specialization to innovate and become efficient competitors in certain market segments.

Most importantly, the use of AI is not equally beneficial across all industries. Sectors of the economy centered on digital data, such as technology and finance have adopted AI fast, but much of the industry reliant on physical labor or human interaction and open to regulation have shown more lackluster technology adoption.

Overall, AI has a promising future and a challenge to the future of market competition and concentration. Multinational companies are prone to the advantage of scale, access to data, and financial resources that could be reinforced by AI technologies; smaller companies can get niches like accessible digital tools and innovation ecosystems. The long-term effect of AI on market structure is therefore a complicated one depending on the availability of technologies, labor markets adaptation, and regulatory policies determining what AI technologies innovations are introduced where there is a choice.

15. References

- World Economic Forum – Future of Jobs Report
  https://www.weforum.org/publications/the-future-of-jobs-report-2025/
- IMF – AI and Global Inequality (2024)
  https://www.imf.org/en/blogs/articles/2024/01/14/ai-will-transform-the-global-economy-lets-make-sure-it-benefits-humanity
- European Commission (2021) – AI and Market Competition
  https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence
- Varian, H. (2019) – Artificial Intelligence, Economics, and Industrial Organization
  https://www.nber.org/system/files/working_papers/w24839/w24839.pdf
- David H. Autor Why Are There Still So Many Jobs? The History and Future of Workplace Automation
  https://economics.mit.edu/sites/default/files/inline-files/Why%20Are%20there%20Still%20So%20Many%20Jobs_0.pdf
- Brynjolfsson, E., & McAfee, A. (2017) – The Business of Artificial Intelligence https://hbr.org/2017/07/the-business-of-artificial-intelligence
  https://www.nber.org/system/files/working_papers/w23928/w23928.pdf

- Stanford AI Index Report (2024/2025)
  https://hai.stanford.edu/ai-index/2025-ai-index-report
- McKinsey Global Institute – The State of AI
  https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai
- OECD Digital Economy Outlook
  https://www.oecd.org/en/publications/oecd-digital-economy-outlook_f0b5c251-en.html
- Samsung AI data leak – Bloomberg
  https://www.bloomberg.com/news/articles/2023-05-02/samsung-bans-chatgpt-and-other-generative-ai-use-by-staff-after-leak
- Tom's Hardware – Moonshot releases 2.8-trillion-parameter Kimi K3
  https://www.tomshardware.com/tech-industry/artificial-intelligence/moonshot-releases-2-8-trillion-parameter-kimi-k3
- The Decoder – Alibaba's Qwen takes on Kimi K3 with open-weight Qwen 3.8
  https://the-decoder.com/alibabas-qwen-takes-on-kimi-k3-with-open-weight-qwen-3-8-says-model-is-second-only-to-fable-5/
- Tom's Hardware – Nvidia's $20 billion Groq deal produces its first chip
  https://www.tomshardware.com/tech-industry/semiconductors/nvidias-20-billion-groq-deal-produces-its-first-chip
- Carnegie Endowment (2026) – Beyond the Hype: Assessing Hyperscaler Nuclear Commitments Against US Energy Realities
  https://carnegieendowment.org/research/2026/06/beyond-the-hype-assessing-hyperscaler-nuclear-commitments-against-us-energy-realities
- Anthropic – Anthropic and Amazon expand compute collaboration
  https://www.anthropic.com/news/anthropic-amazon-compute