

Abstract

Artificial Intelligence (AI) has profoundly transformed various business sectors, exemplified by OpenAI's ChatGPT, which offers instantaneous virtual assistance. Despite the significant advantages, including automation, enhanced data analytics and decision making, and innovation acceleration, concerns about AI's sustainability and legal implications have emerged. Notably, the unauthorized use of intellectual property for AI training has raised complex legal issues. The concentration of data amongst technology giants also raises concerns about the monopolisation of the technology. The Competition and Consumer Commission of Singapore ("CCCS") and the Economic Society of Singapore ("ESS") should establish clear guidelines to foster AI development while ensuring fair competition and economic growth. As such, this essay explores AI's benefits in business, its impact on market dynamics, potential risks of tacit collusion, consumer protection issues, and the need for regulatory measures. To mitigate these issues, proposed recommendations include supporting SMEs in AI adoption, regulating pricing algorithms, enforcing ethical data collection practices, and enhancing consumer awareness and protection. Effective regulation can balance technological advancement with the safeguarding of competition and consumer rights, maximizing AI's benefits while mitigating negative implications. Simultaneously, education helps promote the awareness and adoption of AI and its different fields, allowing the general population to make informed decisions. Collaboration including industry leaders allows the updating of legislation to keep pace with the technology's upcoming risks.

How should Competition and Consumer Protection rules evolve in the age of Artificial Intelligence (“AI”)?

Artificial Intelligence (“AI”) has been the buzz in recent years. OpenAI’s ChatGPT has provided the world with a new and unique experience with a virtual assistant answering their questions in the blink of an eye. However, is it truly all sunshine and roses beneath it all? Doubts have started to surface regarding the sustainability and efficacy of AI models, both in their training and use alike. The alleged use of intellectual property without the owners’ consent in training such models has given rise to complicated legal matters and violations. As such, the Competition and Consumer Commission of Singapore (“CCCS”) and Economic Society of Singapore (“ESS”) should define clear guidelines and possible intervention to aid in the development of this technology, without hindering competition and economic growth.

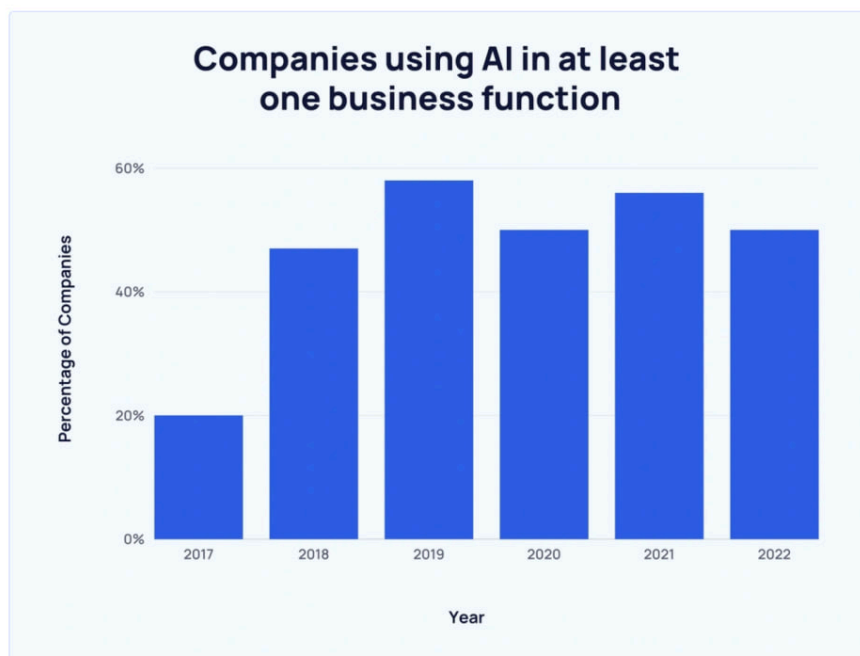


Fig. 1 Companies using AI in at least one business function

AI has revolutionised the business world with over 77% of companies either using or exploring the use of AI (Cardillo, 2024). Incorporation of AI has brought about significant transformations across business processes. From automating routine tasks and data analytics to enhancing innovation and investments, AI's impact in business is irrefutable.

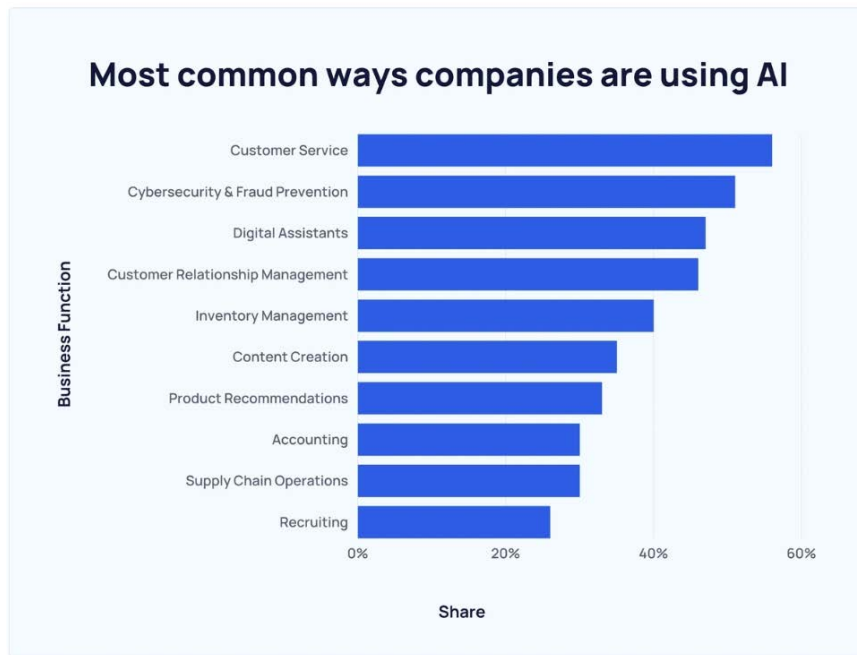


Fig. 2 Common ways companies are using AI

One of AI's most significant benefits in business is the automation of routine tasks, such as emails and customer inquiries. AI can be used to provide a seamless customer service experience where AI-powered chatbots offer 24/7 customer support, dispensing advice without any human intervention. This allows the company to not only provide instant, consistent, and accurate responses but to also utilise their human resources properly on more strategic activities. Moreover, in industries like construction or interior design, automatic generation of estimated service fees based on the specifics of the projects can also be done by the AI chatbots.

Next, AI has significantly improved the field of data analytics. AI systems can not only analyse vast amounts of data but also identify patterns and preferences. Thereby, allowing businesses to better identify customer needs and preferences to help create a more informed decision-making process. This helps in creating more relevant products and personalised marketing campaigns that better appeal to customers and market demands. AI is also a powerful tool in innovation, playing a crucial role in product development through assisting the creation of new ideas and prototypes, enabling businesses to accelerate their innovation process and remain competitive.

Lastly, AI has also had its impact in the financial sector where even massive companies such as JPMorgan Chase have started creating their own AI, IndexGPT. AI is being utilised to revolutionise the investment process by robo-advisors such as Syfe through providing personalised investment advice and portfolio management adjusted to individual risk tolerance and market conditions to customers. This provides customers with optimal investment strategies, superior portfolio performance and tailored solutions that align with their situation.

While AI's usage in business has been beneficial, it has also resulted in a significant negative impact on the effectiveness of current antitrust laws, particularly in relation to market dominance and potential collusion between businesses.

Generally, Multinational corporations ("MNCs") are able to dominate the market as they have more access to vast amounts of data, resources and experts compared to Small and medium-sized enterprises ("SMEs"). This competitive advantage enables MNCs to develop more comprehensive AI models that can not only offload mundane tasks but also enhance business operations. An example could include Google and Amazon who can utilise data collected from their operations to train their AI models

for specific purposes. This results in MNCs gaining a competitive edge, increasing their market dominance and reducing market competition. Whereas SMEs may not be able to utilise AI as effectively, since they lack access to the vast data and expertise necessary to develop more comprehensive models. While some may argue that outsourcing is possible, it comes with exorbitant costs, further widening the disparity between MNCs and SMEs and increasing MNCs' dominance in the market.

The use of AI in business operations also increases the risk of tacit collusion. While collusion through explicit communication and agreements is illegal, this does not apply to natural market outcomes (Eschenbaum et al., 2022). The increased adoption of AI, where over 50% of US retailers utilise pricing algorithms and 67% of EU firms employ algorithms to track their competitors' prices daily can result in potential tacit collusion and anti-competitive results (Eschenbaum et al., 2022). The multiple algorithms could independently converge on a uniform price even without direct human intervention. This can occur when multiple companies use similar algorithms or when the algorithms independently adjust to changes in competitor prices and consequently resulting in reduced price competition which can be harmful for consumers.

Besides the negative impact on antitrust laws, the integration of AI also poses significant concerns to consumer protection, from price discrimination and privacy intrusion to misinformation and job loss.

While AI plays a crucial role in data analytics, there are concerns of its potential for price discrimination and tacit collusion which could harm consumers and raise ethical issues. AI algorithms might engage in price gouging, significantly raising prices to exploit consumers' urgent needs, leading to unfair pricing and the exploitation of vulnerable consumer groups. Moreover, if models are trained on biased data, they

may make discriminatory decisions, potentially undermining consumer trust and exacerbating social inequalities.

Next, the training of generative AI requires vast amounts of data, usually at least 10 times the data points relative to the features in the dataset (Smolic, 2024). However, some data may be used without explicit consent, raising serious privacy concerns especially if the data includes copyrighted content and personal information. For example, OpenAI reportedly scraped 300 billion words from the internet to train ChatGPT without explicit permission (Xie & Poritz, 2023). Moreover, the rapid advancement of AI technology has outpaced the development of regulatory frameworks (Natasha Allen, 2024), resulting in a lack of comprehensive regulatory frameworks to adequately regulate AI-driven practices and further exacerbating privacy issues, leaving consumers vulnerable to data exploitation and misuse.

Beyond privacy concerns, AI also has the potential to create and distribute misinformation. AI-generated content can be incredibly convincing and difficult to distinguish from facts, possibly misleading consumers and impacting their decisions, thereby affecting consumer trust and public discourse. An example is the *Moffat v. Air Canada* resolution from the Canadian Tribunal.

Lastly, the increased adoption of AI has also led to job losses in various sectors. Low-skilled jobs, particularly those involving routine tasks, have been replaced with AI. Large employers, such as Amazon, have started leveraging on AI to develop and use robots which has resulted in the replacement of over 100,000 workers (Sharma, 2024). This increase in job displacement can negatively impact consumer purchasing power, reducing the stability of the overall economy.

Henceforth, proper policy and regulation are necessary to guide businesses towards the ethical use of AI. Policies must strike a balance between regulation and technological advancement while ensuring the privacy of consumers and intellectual property of creators are not exploited in the development of AI models, regardless of profit. Businesses should also uphold ethical applications of the technology, by abiding to fair use agreements. Thus, with these considerations in mind, we propose the following measures.

To combat the disparity in resources between MNCs and SMEs, the government could provide opportunities for SMEs to learn to integrate AI into their business operations. Currently, SkillsFuture portal and AI Singapore (“AISG”) already offers specialised courses on the application, ethics or sciences behind AI. The government can promote or further subsidise these courses to SMEs to encourage the adoption, allowing SMEs to gain a similar technological edge to MNCs, albeit on a smaller scale.

However, uptake may remain low despite subsidies, as business owners might not be aware of the technology’s potential, consider the barrier of entry too costly or the lack of access to cost-effective models. Hence, a marketing campaign that promotes the pros, cons and applications of the technology, highlighting the free open-source models could help change this perception. Additionally, for SMEs that possess adequate hardware to download the online AI models, the government could provide courses to train them on the refinement of the models to suit their specific business needs. The course could also demonstrate the upcoming SEALION model, allowing participants to trial AI applications tuned to Southeast-Asian languages. These incentives will help to mitigate the market domination of MNCs larger companies, giving smaller competitors a leg up better chance and improving their AI readiness.

Another approach to improve competition would be prohibiting price undercutting algorithms or similar methods. Allowing price undercutting algorithms may result in a uniform price that impedes competition by not only hampering differentiation, disincentivising innovation but also increasing the barrier of entry for new competitors, since new competitive prices would be quickly matched by the algorithms. Thus, resulting in market conditions that may lead to the creation of an oligopoly structure.

If prohibiting pricing models is too radical a measure, another solution could involve proposing legislation requiring companies to develop regulatory layers within their model and disclose justifications for the pricing decisions. An example could be generating reports of the decisions made by outputting statistics like comparison and differential data. This disclosure allows regulators to evaluate pricing decisions while allowing companies to explicitly justify the model's decision-making and protecting their sensitive training data. Thereby, preventing anti-competitive behaviours and protecting consumers. However, this approach will require the formation of an agency to regularly audit these reports, ensure compliance and retroactively investigate accusations of antitrust behaviour.

Adding onto the enhancement of pro-competition regulations, improvement of consumer protection can also be done through the development of supplementary regulations. This encompasses regulations surrounding ethical data collection practices. The government can facilitate the adoption of ethical guidelines for AI model development and applications that adhere to best practices in data collection. These guidelines should emphasise on data minimisation, only collecting necessary data for operations while also ensuring there is explicit consent from consumers, possibly through transaction records clearly stating that the data may be used for model training

purposes. Similarly, copyright data and intellectual property should only be collected with the explicit consent from the owners should it be for the express purpose of refining a business's model.

To enforce these guidelines and combat any potential breaches of copyright issues or privacy, such as the disclosure of sensitive information during model training. A regulatory agency, similar to Financial Industry Dispute Resolution Centre (FIDReC) for financial disputes or the Intellectual Property Office of Singapore (IPOS), should be established to not only handle copyright disputes but to also provide a platform for consumers or copyright owners to report suspected unconsented data usage, in which the agency can then conduct audits on the data collection process in response.

In addition to ethical data collection, guidelines on the quality and diversity of data collected must also be strictly enforced when it comes to the refinement of the AI models. This is important since AI models that are trained with biased data will weigh in these biases and generate a discriminatory outcome. For example, a documented study has showed biases in models tend to favour linguistic preferences of young white male speakers, unintentionally discriminating against young non-white male speakers (Zhang, S., et al. 2021), This bias has been speculated to be due to majority of the social media content being used to train the models being predominantly generated by the former group. Thus, the guidelines have to highlight non-discriminate data collection with distribution considerations to prevent formulating biased models.

Next, more and more businesses have started employing the use of generative AI for digital customer support in the form of chatbots. However, these chatbots may provide customers with inaccurate information, leading to ill-informed decisions by consumers. In the case of *Moffatt v. Air Canada*, the tribunal ruled that the airline should be liable

for the information their chatbot generated as it was deployed to their website and represented the company in said conversation. Similarly, legislation should hold entities liable for their representing AI generations since the development of the businesses' technology is the business's responsibility, not the customers. Customers should not have to bear the responsibility of ensuring that the information generated is accurate.

To further protect consumers, businesses should explicitly notify customers who engage a chatbot that the information generated may not be accurate and the chatbot has its limitations. This provides the customer with ample warning that their final decision should be made with information verified through other channels. Also, for sensitive concerns such as healthcare or personal finances, regulations stating that the generated advice should be backed by explanations that are understandable to an average consumer. This helps to ensure both reassurance and compliance with the previous suggested guidelines.

Moving on from regulations on businesses, efforts to educate consumers on the possible malicious uses and limitations of AI is also essential. The government could start a public awareness campaign or digital literacy program to familiarise consumers with the benefits and limitations of AI, enabling consumers to individually assess if the generated information is trustworthy and to make informed decisions when interacting with AI-driven services.

Lastly, as AI evolves, legislation must also keep pace. The government should establish a committee comprising of the government, industry and academic members to leverage on experts in the industry to not only foster innovation but to also frequently update ethical standards, guidelines and awareness and application of AI.

Moreover, this committee can also be consulted on emerging risks or hindrances to the technology's advancement.

In conclusion, while the advancement of AI has brought significant benefits to both businesses and consumers alike, it has also brought about adverse effects on competition and consumer rights. The government must establish effective regulations to set clear guidelines, strict regulations, provide support to SMEs and empower consumers to keep pace with AI's development and mitigate any negative implications. Achieving a balance between innovation and regulation is the key in maximising AI's benefits and development while safeguarding competition and consumer protection.

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