



Ratten, Vanessa, Hasan, Rakibul, Kumar, Deepak, Bustard, John, Ojala, Arto and Salamzadeh, Yashar (2024) Learning from artificial intelligence researchers about international business implications. *Thunderbird International Business Review*, 66 (2). pp. 211-219. ISSN 1096-4762

Downloaded from: <http://sure.sunderland.ac.uk/id/eprint/17411/>

Usage guidelines

Please refer to the usage guidelines at <http://sure.sunderland.ac.uk/policies.html> or alternatively contact sure@sunderland.ac.uk.

Learning from artificial intelligence researchers about international business implications

Vanessa Ratten, Deepak Kumar, John Bustard, Rakibul Hasan, Arto Ojala and Yashar Salamzadeh

Abstract

Artificial intelligence is a dynamic and emerging form of technological innovation that has numerous ramifications for international business managers. The aim of this article is to obtain commentary from researchers about the role artificial intelligence will play in the global arena. This includes asking questions about how it will affect internationalisation processes and whether it will lead to more international collaboration. Well known researchers provide advice on what international business managers should do in terms of staying competitive but also how they can integrate learning from artificial intelligence into their business operations. Lastly suggestions for future research regarding the interplay between international business and artificial intelligence are provided.

Keywords: artificial intelligence, business trends, digitalisation, international business

Introduction

Bahoo et al (2023) suggest that artificial intelligence started in recent times with William McCulloch in 1943 theorising that a model comprising artificial neurons could be a reality in the future. This was followed by Alan Turing in the aftermath of World War II discussing the role machine learning could play in society. In 1956 at the Dartmouth conference the term ‘artificial intelligence’ was proposed as a way to describe in general how machines could have human like intelligence. In the 1970’s technology such as the tape recorder and cassette player became popular. This coincided with an emphasis in electronics in Japan with a humanoid robot called WABOT-1 being made. In the 1980’s research on artificial intelligence progressed but it was not until the 1990’s with the IBM Deep Blue computer in

1997 winning a chess competition that it gained popularity. In the 2000's as the internet emerged new types of artificial intelligence became evident in the marketplace (Hermann, 2022). Innovative ways of thinking about artificial intelligence in people's lives were discussed with the Roomba automatic roaming vacuum cleaner became popular. During the 2000's online companies such as Facebook and Twitter emerged that emphasised social interactions (Eriksson et al., 2020). This was a new form of artificial intelligence in that it utilised online communities to understand network configuration (Davenport et al., 2020). By doing so it would enable predictions about future behaviour to be estimated. This continued with online search engines such as Google becoming popular. In the 2020's after the COVID-19 pandemic resulted in a large increase in usage of digital technology, artificial intelligence has boomed with the introduction of generative forms such as ChatGPT gaining popularity. In addition, at home virtual assistants and chatbots have further integrated the usage of artificial intelligence into people's lives (Kumar et al., 2019). For international business, big data and machine learning techniques have further transformed the usage of artificial intelligence (Huang and Rust, 2022).

Pan and Nishant (2023:2) state that artificial intelligence is "a digital technology that aims to imitate human intelligence (artificial general intelligence, or AGI) though it can currently only perform relatively more straightforward tasks (artificial narrow intelligence, or NGI)". Artificial intelligence can take a public or commercial nature depending on how it is used in society (Huang and Rust, 2021). Public artificial intelligence involves technology systems used by the public sector such as regional authorities, local councils and governments. It tends to focus on infrastructure utilised by citizens such as telecommunications and public services but can include social personal artificial intelligence such as automated businesses and digital healthcare (Mustak et al., 2021). Surveillance based artificial intelligence includes crowd monitoring for safety reasons. Sustainability related artificial intelligence refers to

pollution or waste management. Commercial artificial intelligence is used by profit oriented businesses and focuses on customer engagement with technology (Verma et al., 2021).

Commercial artificial intelligence can include digital public data and chatbots used to help make decisions (Wirth, 2018).

Huang and Rust (2018) state that the four main forms of artificial intelligence are mechanical, analytical, intuitive and empathetic. Mechanical intelligence involves tasks that are repeatedly performed and normally involve mundane tasks. This enables routine tasks to be conducted via computers thereby saving humans time to fulfill other tasks. Analytical intelligence refers to technology used to solve high level problems. This means there is some degree of sophistication in terms of critically processing information and learning new things. Intuitive intelligence involves more emotional thinking through computers. It emphasises creative and predictive thinking rather than just analysing information. Empathetic intelligence involves understanding emotions that can include verbal and nonverbal cues and interpreting them in the right way.

The aim of this article is to obtain information and advice from international business scholars about artificial intelligence and international business. This will help in solidifying the current direction of the field and formulating research suggestions for the future. Responses about managerial implications about artificial intelligence regarding international business are also asked to the respondents. Thereby helping managers learn about potential changes in business practices that result from the use of artificial intelligence.

Learning from artificial intelligence researchers

Academics were asked to consider the following questions and told that they could respond to just one question, some or all. The maximum word count per contribution was 1000 words.

1. What suggestions do you have for researchers studying artificial intelligence and international business?
2. What current contributions to the artificial intelligence and international business research field do you think is the most important and why?
(A contribution can be a article, book, book chapter, idea, conference paper or other intellectual output)
3. What in your view are research gaps and opportunities in the artificial intelligence and international business research field at the moment?
4. What companies are the most innovative regarding artificial intelligence usage?
Please explain.
5. How do you think international business managers can engage with artificial intelligence?

Below is the verbatim responses received from the academics. The format followed is that each question is stated then the name of the academic and their response included. This enables a holistic understanding about different kinds of issues international business scholars and practitioners need to consider related to artificial intelligence. This will help them to plan for the future and to consider the best plan of action. As the nature of artificial intelligence is changing so quickly in the global marketplace, it is important to highlight key issues that should be responded to immediately, more medium term considerations and long term objectives. Thereby enabling a immediate, short term, and long term planning issues to be implemented regarding artificial intelligence in the international business landscape. There is a international response to the questions as academics come from various global locations and include:

Vanessa Ratten, La Trobe University, Australia

Deepak Kumar, Indian Institute of Technology Kanpur, India

John Bustard, Ulster University, Northern Ireland

Rakibul Hasan and Arto Ojala, University of Vaasa, Finland

Yashar Salamzadeh, University of Sunderland, United Kingdom

1. What suggestions do you have for researchers studying artificial intelligence and international business?

Vanessa Ratten

I think embrace the novelty and newness of artificial intelligence. We are currently in the age of artificial intelligence so it is an exciting time in terms of the speed and rate of development regarding artificial intelligence. I think researchers need to embrace artificial intelligence in terms of developing new theories and thinking about how international managers are adapting to the change. I would recommend that researchers revisit existing international business theories regarding digitalization and internationalisation but adapt them to the artificial intelligence context. Thereby creating different perspectives about the relevancy and currency of artificial intelligence in the international business environment.

Deepak Kumar

Researchers should examine AI's use in international business, including market research, supply chain optimization, cross-cultural communication, and international marketing. Investigating individual use cases in these fields can reveal how AI can improve international operations. Given the ethical issues surrounding AI, ethical concerns are paramount.

Researchers should systematically study these concerns in international business contexts, addressing data protection, transparency, fairness, and bias in cross-border AI deployments.

International business researchers should indulge in joint research with AI experts. This interdisciplinary approach can generate new ideas and deepen understanding of how AI might boost international commerce. To keep ahead of AI research, researchers should stay educated, adapt research methods to develop AI trends, and attend AI conferences.

Researchers should also examine how AI affects global trade and investment, including trade patterns, investment decisions, and trade discussions. They should also investigate AI-powered cross-cultural communication tools and foreign market entry tactics. A holistic view of AI adoption must consider its socioeconomic effects on employment, income distribution, and societal well-being.

Researchers can also examine AI's function in international business crisis management and risk assessment, including global disruptions. They should also focus on leveraging AI to optimize resource allocation, reduce environmental effects, and promote responsible corporate conduct in international business.

Yashar Salamzadeh

Due to the interdisciplinary nature of studying AI and international business fields at the same time, researchers primarily require cross-disciplinary research teams with knowledge on various aspects of these fields.

This research theme must appreciate the available wealth of knowledge in both fields while also being aware of the rapid pace of improvement and transformation here.

Researchers must sense and seize opportunities to define new research ideas based on knowledge developed in other relevant fields of study, contexts, and also the emerging

concerns such as moving towards having new generation of managers and entrepreneurs in IR4.0 and Society 5.0 era.

It is critical to consider the soft side of AI in addition to the hard side. This is why researchers must not lose sight of both aspects at the same time, because focusing on the hard technological side will only be useful if the soft ethical, value-based, humanistic side is also included in the scope of their research, and only in this way they will be able to have a proper impact on the society using their research.

2. What current contributions to the artificial intelligence and international business research field do you think is the most important and why?

(A contribution can be a article, book, book chapter, idea, conference paper or other intellectual output)

Vanessa Ratten

I think there are many general articles in the academic literature and newspapers on artificial intelligence particularly around ChatGPT and the role of generative artificial intelligence. The most influential contributions are those that specifically discuss how international business managers can adapt to artificial intelligence.

Deepak Kumar

The most significant recent contributions to AI and international business research are:

1. Artificial Intelligence and International Business (Fornes & Altamira, 2023): It discusses how AI gradually enhances efficiency, cross-cultural communication, and knowledge exchange in international businesses. It also highlights serious AI adoption problems and calls for trade regulation changes.
2. Major obstacles and directions for the application of artificial intelligence in international business (Aminov, Krikukhin & Zakharova, 2023): This article addresses regulatory, personnel, and technological impediments to worldwide AI implementation. It emphasizes "smart" personnel practices, adaptable business models, and automation to improve the worldwide operations of international businesses.
3. The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions (Borges et al., 2021): This systematic literature study identifies four AI-created value streams in international business: decision assistance, customer and staff engagement, automation, and new product development. It stresses the importance of data quality, cultural diversity, and changing rules.
4. Artificial intelligence: The light and the darkness (Grewal et al., 2021): This paper discusses how AI can improve decision-making and automation but also displace jobs and compromise data privacy. It emphasizes responsible AI development and regulation.
5. Artificial intelligence in business: State of the art and future research agenda (Loureiro et al., 2021): This study groups 18 AI research areas into four clusters. It analyses new themes and issues, such as AI-IoT integration and ethics, to guide future research.
6. Leveraging Artificial Intelligence in Business: Implications, Applications, and Methods (Sestino & Mauro, 2022): This study categorizes current research into implications, applications, and techniques, providing insights into the emerging AI landscape in business.

7. An Artificial Intelligence Foreign Market Screening Method for Small Businesses (Fish & Ruby, 2009): This article provides an AI-based way for small businesses to evaluate overseas markets, making international expansion easier. This contribution is crucial because it addresses small enterprises' unique demands in evaluating and expanding into overseas markets.

3. What in your view are research gaps and opportunities in the artificial intelligence and international business research field at the moment?

Vanessa Ratten

There are many research gaps and opportunities at the moment so the time is ripe to conduct research on this topic. At the moment we have just come out of the COVID-19 pandemic so there is already a heightened sense of emphasis on digitalisation and digital entrepreneurship. This has led to the artificial intelligence revolution but if you search the literature there is still not that much written about artificial intelligence and international business. There may be much existing that indirectly link to the topic but specific articles are rare. This will change as more researchers and practitioners want to know what should they do regarding artificial intelligence and specific steps to take. I think there needs to be more theory development or studies that take a multi-method perspective including different units of analysis such as the international business manager and community.

Deepak Kumar

The intersection of artificial intelligence and international business offers a multitude of research gaps and exciting possibilities. One crucial area of exploration involves understanding how AI is transforming trade patterns, supply chain networks, and global investment decision-making. Research into the socioeconomic impacts of AI adoption in international business, including its effects on employment, income distribution, and social equality, is essential for informed policy development.

Another promising avenue for research lies in AI's role in facilitating cross-cultural business negotiations and enhancing communication and understanding across diverse cultures. The ethical dimensions of AI in international business, such as data privacy and fairness, demand concentrated research efforts to establish robust ethical and legal frameworks. Additionally, the cultural adaptation of AI technologies and the integration of AI-enabled sustainability practices into international business operations are uncharted territories ripe for exploration and study.

Organizations venturing into international markets can benefit from AI-driven research on market entry strategies, encompassing market selection, customer segmentation, and timing. The effects of AI on global marketing, consumer experiences, and the optimization of global supply chains warrant in-depth investigation. The synergies between AI, blockchain, 5G, and the Internet of Things (IoT) in international corporate operations represent a compelling and evolving research field. Finally, exploring AI's role in international corporate crisis management and risk assessment can provide valuable insights into adapting to global disruptions.

John Bustard

Introduction:

The burning question in many businesses and organisations around the world is how to navigate the tsunami like paradigm shift in applied business technology that is resultant from the developing proliferation of AI. This is particularly due to the phenomenal success of Large Language Models (LLMs) such as ChatGPT (Noy and Zhang, 2023). LLMs are exhibiting significant impact effects as ‘meta technologies’ that will exponentially impact on productivity and efficiency but also drive varying labour force impacts given the nature of globalized economics and the resultant pursuit of labour saving for profit (Montobbio, et al. 2022). There is no doubt that the application of LLMs is having considerable implications beyond economy, society and environment which will require appropriate policy oversight and a broader conversation toward more safe application on behalf of humanity (Eloundou et al., 2023).

Given the early successes of these models in adding efficiency to varying business tasks and the potential for rapid adoption, Business Managers have the additional challenge of investors, C-suite management, shareholders and value chain stakeholders toward quickly adopting and engaging these technologies to create further operational efficiencies, greater customer intimacy and/or as a means to explore product/service leadership in their industry or category (Gellweiler and Krishnamurthi). Many firms are seeing success in using these value creating opportunities to digitally transform their organisations and as such, it could be argued that LLMs as with other AI, offer a catalyst and focal point for digital transformation strategy to coalesce more easily and as a conduit to explore DT in organisations of all sizes and types (Holmström, 2022).

Indeed, given these rapid advances and the relative ease of deploying and applying LLMs at relatively low cost for increased value creation through the technology, it is clear that several challenges loom for businesses and brands as they seek an appropriate pathway to assure organisational longevity. Through such transformation it is critical that managers gain perspective and become mindful of the ethical, cultural, technical and looming regulatory oriented challenges that will co-exist with the development of such technology through such business transformation (Qiu, 2023).

Business Value:

There is a growing body of work highlighting the exceptional advances in some distinct areas, for example, knowledge work, that are offering quantitative insight and construe as new business value in leveraging these models. A recent working paper released by Harvard scholars working in partnership with Boston Consulting Group (Dell'Acqua et al., 2023, p.1) highlighted a ‘jagged technological frontier’ where research is uncovering tasks that AI excels at but also some tasks where it struggles in similarly complex actions.

The opportunity is clear though, with research suggesting consultants at the firm partnering with the AI (ChatGPT4) were 12.2% more productive, 25.1% more time efficient and a staggering 40% increase in the quality of work over the control group not using AI for these knowledge work tasks. Also and possibly more critically, consultants deemed to be below average performers based on the earlier analysis carried out, improved by 43% by leveraging AI in their roles (for comparison, above average performers benefitted by 17%). One critical issue with the frontier nature of this evolving technology in this instance was were tasks that were outside the AI’s capability frontier, consultants were 19% less likely to finish with the correct solution.

Key Challenges for Business Managers:

As co-founder of what became Google's DeepMind, Mustafa Suleyman (2023) suggests the next decade will see access increase to AI's with collective intelligence applicable as strategists, coaches, negotiators and lawyers and as such this means that its more a matter of when than if Managers will need to develop a DT business strategy. Some of the key challenges for Business Managers which loom across several aspects of these emergent wave will also be opportunities for organisations to embrace DT in partnership with the very technology itself in its 'creative' capacity. In framing this emerging reality, there are several examples highlighted below which will need to be considered as Business Managers negotiate developments in their industry.

Challenge/Opportunity	Solutions/Approaches
Strategy: Having an agreed business strategy (and appropriate business model) for approaching AI	From internal Policy development on the application of AI through to embedding AI as an opportunity for Digital Transformation as versus simple digitalisation. Strategic oversight is fundamental for success and survival.
Insight: Modes to measure AI's impact and its opportunity in an organisation's ecosystem	An evaluative mechanism/framework to support organisations in exploring value creation opportunities/costs and capacity to underpin this insight into actionable strategy.
Processes: Approaches to enable (or disable) AI's use in an org's culture and environment	Organisational approaches to explore best fit for managing the activation or delay in applying AI for particular economic, cultural or ethical reasons from an organisational perspective.
People: Talent enablement through systems and	HR and business functions co-creating mechanisms to leverage and support appropriate activation and

processes supporting creating dynamic capabilities and reskilling staff	management of talent toward enabling capacity. This is critical to orient developing business ecosystems within this paradigmatic business shift.
---	---

Source: Author developed

Future Research:

Given the continuing and significant impact of LLMs on businesses tactical actions in delivering tasks more efficiently, it would be useful to consider the collective outcomes of AI as a partner in strategy development. Opportunities for future research to explore this important development would be:

- a) Assessing LLMs and humans comparatively in terms of strategy development leveraging common strategic frameworks such as PESTEL, SWOT and TOWS analysis.
- b) Assessing LLMs vs humans and vs other LLMs in regards to scenario planning or forecasting abilities – predictions based on current trends and data toward future insight.
- c) LLMs as creative partners in innovation and as enablers in the identification of a more dynamic and disruptive business model.

Integrating LLMs as 'strategic partners' may offer a unique opportunity to blend the intuition of human thought with the expertise of AI's data-driven insights. As Verganti et al. (2020, p225) posited in 2020, "AI can offer better performance in terms of customer centricity, creativity, and rate of innovation." Given the magnitude of this next wave of AI, it will be interesting to see how business managers seek to leverage LLMs for competitive advantage in the coming years.

Rakibul Hasan and Arto Ojala

International expansion of firms

Recent IB research recognizes that specific characteristics of technological artifacts profoundly impact the internationalization of digital-based ventures (Ojala et al., 2018, 2023) and the global expansion strategies of large firms (Autio et al., 2021). Therefore, IB researchers can take a micro foundational lens focusing on technological artifacts of AI. We acknowledge that IB studies focus on humans (e.g., bounded rationality, cognitive flexibility) to argue on a micro foundational lens (Bhatti et al., 2022; Coviello et al., 2017). While the human-centric focus is paramount, our invitation is complimentary and emphasizes the technical characteristics of computations and machines to extend the IB field. We comprehend research opportunities of AI at the intersection of the international expansion of firms on five fronts.

First, Ojala and his colleagues (2018, 2023) focus on international new ventures and demonstrate how entrepreneurs integrate, build, and reconfigure their capabilities by leveraging the characteristics of digital artifacts in internationalization. Such studies advance the IB field yet impliedly indicate the leveraging of micro foundational aspects of technological artifacts in the IB literature. Scholars thus can investigate the specific features of AI and what entrepreneurs should do with AI to facilitate internationalization. Hence, what are the critical characteristics of AI, and how do entrepreneurs utilize those characteristics to facilitate internationalization? How do entrepreneurs integrate, build, and reconfigure specific features of AI into their products and services, and how these actions enable them to access new international markets?

Second, the global strategy literature identified several features of technological artifacts—one is related to AI, which is re-programmability (Ojala et al., 2023; Autio et al., 2021). It refers to the openness and extent to which AI is modifiable for new purposes by

entrepreneurs or firms. This distinct characteristic is also recognized in multidisciplinary AI literature (Rahwan et al., 2019). We argue that entrepreneurs can dissect and modify the existing computational capability of AI embedded into their product or service offerings. This reprogrammable computational capability allows entrepreneurs to develop dynamic capabilities. For example, a group of AI scientists working on speech recognition in Finland formed a new venture named Speechly (www.speechly.com), which utilizes natural language processing and machine learning capabilities. The original function was for e-commerce stores to enable voice-enabled shopping baskets. However, the AI-driven capability can be modified and configured to functions like automated voice chat moderation to combat toxic behavior in the game industry. The reprogrammable feature of AI offers flexibility to construct new functions after preliminary initiation. Therefore, we maintain that it enables entrepreneurs to modify the structure of AI systems and their original functions (Ojala et al., 2023; Rahwan et al., 2019). Hence, how do international new ventures utilize the re-programmability features of AI to facilitate expansion to new industries and foreign markets? How do entrepreneurs configure dynamic capabilities powered by AI to facilitate firm internationalization? How do firms control openness and re-programmability of AI services with their global ecosystems?

Third, Autio and his colleagues (2021) focus on large firms and illustrate how firms organize their knowledge activities in international expansion activities enabled by AI. They indicate firms' utilization of the economic mechanism of AI in coordinating and moving tangible and intangible goods across borders. Therefore, future research can take an economical and transaction-based point of view to investigate the impact of AI in optimizing business processes (Cuypers et al., 2021). Hence, how can firms gain efficiency and optimize business processes powered by AI systems? To what extent does AI complement humans' bounded rationality in internationalization and firm performance?

Fourth, future research can take a behavioral point of view to investigate the formation of knowledge and decision-making in international expansion. Recent information management literature debates the role of machine intelligence that emphasizes augmentation versus automation in human-led decision-making tasks (Lyytinen et al., 2021; Tschang & Almirall, 2021). Furthermore, there is debate on whether AI complements or replaces human counterparts in business process optimization and decision-making (Choudhury et al., 2020). Accordingly, researchers can take a knowledge-based view to analyze the augmentation-automation paradox in internationalization decision-making (Grant & Phene, 2022). We maintain that AI performs well in conjunction with human counterparts. It should be deployed to complement humans, not to replace them in decision-making tasks, as human intuition and experience are paramount for organizational success. Hence, how can firms utilize AI to augment humans in internationalization decision-making concerning tangible and/or intangible goods?

Finally, we also contend that the trustworthiness of AI will have effects on building human-machine conjoined and complementarity dynamics in problem-solving and decision-making (Glikson & Woolley, 2020). Therefore, research focus on trust based on Uppsala internationalization theory (Johanson & Vahlne, 2009) would generate a novel understanding of firm internationalization at the intersection of AI. Hence, to what extent human trust in intelligent machines positively impact human-machine complementarity in the internationalization process and reduce the liability of foreignness?

Yashar Salamzadeh

It is undoubtedly difficult to identify all gaps and opportunities in the AI and international business research presented in some paragraphs; however, here I will discuss an emerging opportunity and some relevant gaps related to it.

The rapid pace of AI transformation through natural language processing, machine learning, and self-improvement has resulted in a possible scenario in which AIs can communicate, negotiate, and make decisions together. While we already have this AI-AI communications and negotiations using text, codes, and speech, in some simple negotiation tasks, we need to be ready for the emergence of AI-AI business platforms in international businesses where different functions of the businesses (ranging from marketing, HR, finance, procurement and CSR to even strategic management) can be done through a communication, negotiation and decision-making by two or more AIs. While considering this research opportunity, we face many questions to be answered. Below, some more important ones, are shared briefly:

- What are the impacts of these AI-AI business platforms on the employees and managers of international businesses? And considering the Gen Z and Gen alpha in this transformation adds to the complexity.
- Which organizational systems, and to what extent, are prone to change after the emergence of these platforms?
- How will human-machine interaction look like in AI-AI business platforms?
- What are the social impacts of AI-AI business platforms used in international businesses including the quality of life, equality, justice, transparency, happiness and so on?
- Do we need to expect a new business model innovation in international businesses due to the emergence of AI-AI business platforms?
- What is the decision-making process for humans in AI-AI business platforms?
- What are the ethical aspects of using AI-AI business platforms in international businesses?
- How will international businesses manage their corporate digital responsibility while using AI-AI business platforms?

- What will the new organizational governance systems of international businesses look like while utilizing AI-AI business platforms?

4. What companies are the most innovative regarding artificial intelligence usage?

Please explain.

Vanessa Ratten

I would say OpenAI that produced ChatGPT is the company everyone is talking about and NVIDIA is another company on everyone's radar.

Deepak Kumar

In the dynamic realm of AI innovation, companies like Alphabet Inc.'s Google, Amazon, Microsoft, IBM Watson, Tesla, OpenAI, DeepMind, NVIDIA, Salesforce, and Baidu have emerged as trailblazers, each making significant strides in harnessing AI's transformative power across various sectors.

Alphabet Inc.'s Google stands out for its AI-driven search algorithms, personalized recommendations, and ground-breaking healthcare solutions under Google Health. Alphabet's subsidiary, DeepMind, focuses on AI-driven healthcare solutions and illness diagnostics, pushing the boundaries of medical AI. Amazon is redefining the consumer experience through AI-powered product recommendations and supply chain optimization, setting new standards in e-commerce. Microsoft's cloud computing services empower businesses to integrate AI into their operations, boosting productivity with AI-driven functionalities in Microsoft 365. IBM

Watson provides comprehensive data analysis, decision support, and natural language understanding across various industries.

Tesla leads the charge in AI for autonomous driving, enhancing driver safety and convenience through cutting-edge technology. OpenAI conducts ground-breaking research in natural language processing and reinforcement learning, with applications in healthcare and finance. NVIDIA manufactures GPUs that drive AI research, gaming, and data processing, making it a key player in AI hardware. Salesforce leverages AI in its CRM platform to enhance customer relations and streamline processes, redefining customer relationship management. Baidu, often referred to as the "Google of China," is advancing AI for autonomous vehicles and search technology.

5. How do you think international business managers can engage with artificial intelligence?

Vanessa Ratten

I think they can embrace the change but realise that people still like people. This means incorporate the technology innovations stemming from artificial intelligence but also emphasise the positives that people have. Such as emotional intelligence and empathy as well as socialization. In this way we can positively encourage adaptation of artificial intelligence in a way that diverse sectors of the globally economy like.

Deepak Kumar

Multinational business managers can harness the transformative power of AI through a structured approach comprising several key phases. To begin, it's essential to cultivate a deep understanding of AI concepts and their wide-ranging applicability within the organization. This foundational knowledge enables the identification of relevant AI applications and their potential impact. The next crucial step is to conduct a thorough assessment of needs and market research, considering local dynamics. This process not only uncovers opportunities for integrating AI but also helps gauge the business potential of AI implementations.

Managing cross-border data demands meticulous attention. Prioritizing data management and quality, efficient data collection, and secure storage are imperative to ensure the success of AI initiatives. Collaborating with technical and transdisciplinary AI experts is indispensable in this journey. Implementing AI solutions through pilot projects offers a practical approach to mitigate risks and demonstrate return on investment (ROI). Additionally, selecting AI suppliers with local knowledge enhances scalability and seamless integration.

Recognizing the significance of employee training and upskilling, particularly in ethics, is pivotal. Ethical guidelines and cultural sensitivities play a vital role in successfully implementing AI. To track AI's impact effectively, ongoing monitoring and evaluation are essential, supported by relevant key performance indicators (KPIs). Finally, compliance with global data privacy regulations and industry-specific rules is a non-negotiable aspect of AI adoption.

Yashar Salamzadeh

From my personal perspective, the main path to a higher quality engagement of international business managers with AI stems from the culture of the organizations. First and foremost, managers must have a clear vision of their current culture, preferred digital culture, and path

from their current culture to desired one. Profiling their culture can be a great support in this initiative. While working on the digital culture of their organizations, they need to focus on enhancing the digital skills, digital maturity and digital competencies of themselves, their employees, and their organization as a whole. When these two major components are in place, managers need to start developing and deploying their business's digital vision, digital strategies, and technological digital transformation. In the digital age, finding the best possible balance between these critical factors will be the determining factor between successful and unsuccessful managers.

Conclusion

This article seeks to advance our knowledge and understanding of artificial intelligence in the international business marketplace. This is important as there are currently many changes taking place to how businesses are implementing artificial intelligence in their operations. Global researchers responded to questions about the link between artificial intelligence and international business. Their responses help us to obtain useful advice about future market trends.

References

- Aminov, K. I., Krikukhin, I. Yu., & Zakharova, A. V. (2023). Major obstacles and directions for the application of artificial intelligence in international business. *Economics and Management*, 29(3), 280-287. <https://doi.org/10.35854/1998-1627-2023-3-280-287>
- Autio, E., Mudambi, R., & Yoo, Y. (2021). Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces. *Global Strategy Journal*, 11(1), 3–16. <https://doi.org/10.1002/gsj.1396>
- Bahoo, S., Cucculelli, M., & Qamar, D. (2023). Artificial intelligence and corporate innovation: A review and research agenda. *Technological Forecasting and Social Change*, 188, 122264.
- Bhatti, W. A., Vahlne, J.-E., Glowik, M., & Larimo, J. A. (2022). The impact of industry 4.0 on the 2017 version of the Uppsala model. *International Business Review*, 31(4). Scopus. <https://doi.org/10.1016/j.ibusrev.2022.101996>
- Borges, A. F. S., Laurindo, F. J. B., Spínola, M. M., Gonçalves, R. F., & Mattos, C. A. (2021). The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions. *International Journal of Information Management*, 57, 102225. <https://doi.org/10.1016/j.ijinfomgt.2020.102225>
- Choudhury, P., Starr, E., & Agarwal, R. (2020). Machine learning and human capital complementarities: Experimental evidence on bias mitigation. *Strategic Management Journal*, 41(8), 1381–1411. <https://doi.org/10.1002/smj.3152>
- Coviello, N., Kano, L., & Liesch, P. W. (2017). Adapting the Uppsala model to a modern world: Macro-context and microfoundations. *Journal of International Business Studies*, 48(9), 1151–1164. <https://doi.org/10.1057/s41267-017-0120-x>
- Cuypers, I. R. P., Hennart, J.-F., Silverman, B. S., & Ertug, G. (2021). Transaction cost theory: Past progress, current challenges, and suggestions for the future. *Academy of Management Annals*, 15(1), 111–150. Scopus. <https://doi.org/10.5465/annals.2019.0051>
- Davenport, T., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 48, 24-42.
- Dell'Acqua, F., McFowland, E., Mollick, E.R., Lifshitz-Assaf, H., Kellogg, K., Rajendran, S., Krayer, L., Cadelon, F. and Lakhani, K.R. (2023) Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality. *Harvard Business School Technology & Operations Mgt. Unit Working Paper*, (24-013).
- Eloundou, T., Manning, S., Mishkin, P. and Rock, D. (2023) Gpts are gpts: An early look at the labor market impact potential of large language models. *arXiv preprint arXiv:2303.10130*.
- Eriksson, T., Bigi, A., & Bonera, M. (2020). Think with me, or think for me? On the future role of artificial intelligence in marketing strategy formulation. *The TQM Journal*, 32(4), 795-814.

Fish, K. E., & Ruby, P. (2009). An Artificial Intelligence Foreign Market Screening Method for Small Businesses. *International Journal of Entrepreneurship*, 13, 65.

Fornes, G., & Altamira, M. (2023). Artificial Intelligence and International Business. In: Digitalization, Technology and Global Business. Palgrave Pivot, Cham.
https://doi.org/10.1007/978-3-031-33111-4_5

Glikson, E., & Woolley, A. W. (2020). Human Trust in Artificial Intelligence: Review of Empirical Research. *Academy of Management Annals*, 14(2), 627–660.
<https://doi.org/10.5465/annals.2018.0057>

Grant, R., & Phene, A. (2022). The knowledge based view and global strategy: Past impact and future potential. *Global Strategy Journal*, 12(1), 3–30. Scopus.
<https://doi.org/10.1002/gsj.1399>

Grewal, D., Guha, A., Satornino, C. B., & Schweiger, E. B. (2021). Artificial intelligence: The light and the darkness. *Journal of Business Research*, 136, 229-236.
<https://doi.org/10.1016/j.jbusres.2021.07.043>

Hermann, E. (2022). Leveraging artificial intelligence in marketing for social good—An ethical perspective. *Journal of Business Ethics*, 179(1), 43-61.

Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. *Journal of service research*, 21(2), 155-172.

Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 49, 30-50.

Huang, M. H., & Rust, R. T. (2022). A framework for collaborative artificial intelligence in marketing. *Journal of Retailing*, 98(2), 209-223.

Johanson, J., & Vahlne, J.-E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40(9), 1411–1431. <https://doi.org/10.1057/jibs.2009.24>

Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. *California Management Review*, 61(4), 135-155.

Loureiro, S. M. C., Guerreiro, J., & Tussyadiah, I. (2021). Artificial intelligence in business: State of the art and future research agenda. *Journal of Business Research*, 129, 911-926.
<https://doi.org/10.1016/j.jbusres.2020.11.001>

Lyytinen, K., Nickerson, J., & King, J. (2021). Metahuman systems = humans plus machines that learn. *Journal of Information Technology*, 36(4), 427–445.
<https://doi.org/10.1177/0268396220915917>

Mustak, M., Salminen, J., Plé, L., & Wirtz, J. (2021). Artificial intelligence in marketing: Topic modeling, scientometric analysis, and research agenda. *Journal of Business Research*, 124, 389-404.

- Ojala, A., Evers, N., & Rialp, A. (2018). Extending the international new venture phenomenon to digital platform providers: A longitudinal case study. *Journal of World Business*, 53(5), 725–739. <https://doi.org/10.1016/j.jwb.2018.05.001>
- Ojala, A., Fraccastoro, S., & Gabrielsson, M. (2023). Characteristics of digital artifacts in international endeavors of digital-based international new ventures. *Global Strategy Journal*, n/a(n/a). <https://doi.org/10.1002/gsj.1483>
- Pan, S. L., & Nishant, R. (2023). Artificial intelligence for digital sustainability: An insight into domain-specific research and future directions. *International Journal of Information Management*, 72, 102668.
- Rahwan, I., Cebrian, M., Obradovich, N., Bongard, J., Bonnefon, J.-F., Breazeal, C., Crandall, J. W., Christakis, N. A., Couzin, I. D., Jackson, M. O., Jennings, N. R., Kamar, E., Kloumann, I. M., Larochelle, H., Lazer, D., McElreath, R., Mislove, A., Parkes, D. C., Pentland, A. ‘Sandy,’ ... Wellman, M. (2019). Machine behaviour. *Nature*, 568(7753), 477–486. <https://doi.org/10.1038/s41586-019-1138-y>
- Sestino, A., & De Mauro, A. (2022). Leveraging Artificial Intelligence in Business: Implications, Applications and Methods. *Technology Analysis & Strategic Management*, 34(1), 16-29. <https://doi.org/10.1080/09537325.2021.1883583>
- Tschang, F., & Almirall, E. (2021). Artificial intelligence as augmenting automation: Implications for employment. *Academy of Management Perspectives*, 35(4), 642–659. <https://doi.org/10.5465/amp.2019.0062>
- Verma, S., Sharma, R., Deb, S., & Maitra, D. (2021). Artificial intelligence in marketing: Systematic review and future research direction. *International Journal of Information Management Data Insights*, 1(1), 100002.
- Wirth, N. (2018). Hello marketing, what can artificial intelligence help you with?. *International Journal of Market Research*, 60(5), 435-438.

- Gellweiler, C. and Krishnamurthi, L. (2020) How digital innovators achieve customer value. *Journal of theoretical and applied electronic commerce research*, 15(1), pp.1-8.
- Girotra, K., Meincke, L., Terwiesch, C. and Ulrich, K.T. (2023) Ideas are dimes a dozen: Large language models for idea generation in innovation. Available at SSRN: <https://ssrn.com/abstract=4526071>.
- Holmström, J. (2022) From AI to digital transformation: The AI readiness framework. *Business Horizons*, 65(3), pp.329-339.
- Montobbio, F., Staccioli, J., Virgillito, M.E. and Vivarelli, M. (2022) Robots and the origin of their labour-saving impact. *Technological Forecasting and Social Change*, 174, p.121122.
- Noy, S. and Zhang, W. (2023) Experimental evidence on the productivity effects of generative artificial intelligence. Available at SSRN 4375283.
- Qiu, R. (2023) "Editorial: GPT revolutionizing AI applications: empowering future digital transformation", *Digital Transformation and Society*, Vol. 2 No. 2, pp. 101-103.
<https://doi.org/10.1108/DTS-05-2023-066>
- Suleyman, M. (2023) *The Coming Wave*. Crown.
- Verganti, R., Vendraminelli, L. and Iansiti, M. (2020) Innovation and design in the age of artificial intelligence. *Journal of Product Innovation Management*, 37(3), pp.212-227.