Battle of the AIs: How Generative AI Impacts the Demand for Traditional AI Services
by
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Date: Wednesday, 27 September 2023
Time: 10:30 - 11:45 AM
Venue: Meeting Room 4047, LSK Business Building

Abstract: This research investigates the effects of emerging generative AI, represented by ChatGPT, on the demand for traditional non-generative AI services. While prior studies mainly focused on ChatGPT's influence in online communities, such as content generation and idea crowdsourcing, and its role in labor markets assessing productivity and task performance, our study takes a distinct angle. We probe the direct financial ramifications stemming from ChatGPT’s introduction to the demand of non-generative AI services. By evaluating the revenue implications at an individual customer level, we provide a granular insight into generative AI’s economic footprint within the AI industry. Our findings are illuminating: after ChatGPT’s emergence, there was a significant decline in demand and revenue for non-generative AI services within our study’s scope. We further investigate the factors contributing to this decreased demand and examine if the performance of non-generative AI plays a mitigating role. Additionally, we discuss the prospective role of advanced generative AI iterations, like GPT-4, in accelerating this trend. Our study offers a panoramic view of the AI domain, contrasting the promise of generative models against the ongoing advancements in traditional discriminative ones. For AI service providers, we underscore a pivotal decision: embrace the novel realm of generative AI or bolster the established trajectory of non-generative frameworks.

Bio: Sang-Pil Han is Associate Professor of Information Systems at the W. P. Carey School of Business, Arizona State University. His research interests encompass artificial intelligence, digital platforms, and business analytics. Notably, his work is published in esteemed journals such as Management Science, Management Information Systems Quarterly, and Information Systems Research. Beyond academia, his insights have been showcased in media outlets like Harvard Business Review, Wall Street Journal, and BBC News. Professor Han's research has garnered support from institutions including the Marketing Science Institute, NET Institute, and Hong Kong General Research Fund, as well as private enterprises. He has held educational leadership roles, notably as Co-Faculty Director for the Master of Science in Business Analytics at ASU. Additionally, he served as an Associate Editor for Information Systems Research. Outside academia, his consultation spans from tech startups such as Mathpresso to non-profits like Simple Steps.