

Artificial Intelligence and Porter's Five Forces: An Integration

Chue Kar Wen

Universiti Kebangsaan Malaysia, Malaysia

Lom Hui Shan

Southern University College, Malaysia

Y. L. Adeline

University Malaysia Sabah, Malaysia

Thoo Ai Chin

Univeristi Teknologi Malaysia, Malaysia

The influx of Artificial Intelligence (AI) into Marketing has been surging in recent years in various disciplines of Marketing, however the research are only limited to macro-level analyses. Academic criticisms have been built up on Porter's Five Forces (P5F) that the model is limited to macro-level perspective in measuring the attractiveness (or profitability) of an industry, and no longer up to date to latest business practices. It is noticeable that only a few research introduced or integrated technological advancement into the P5F model to keep the P5F model relevant to the modern business world. AI is capable of sensing, reasoning, and acting; especially reasoning is being focused in the recent researches that aims to develop human reasoning into machines to activate them thinking and acting like humans, undertake more complex work and making better informed decisions. The Three-stage Framework idealised by Huang and Rust (2021) consists of Mechanical AI, Thinking AI, and Feeling AI that are applied coherently into each element in the Porter's Five Forces. The Mechanical AI is to perform repetitive or routine work such as data collection; Thinking AI is to process and analyse the data to decision making (without being needed to supervise); and Feeling AI is to perform communication with humans (e.g. customers). The process is looping back to the mechanical AI as there would be feedbacks from humans as inputs. The integration of the Three-stage Framework as a concept of AI categorises Porter's Five Forces into more micro-level on the analysis of the industry, that would ultimately enhance the relevancy of Porter's Five Forces in the modern and ever-changing business environment. This paper aims to integrate Artificial Intelligence into Porter's Five Forces to enhance the relevancy of the model into the latest business practices, by integrating a conceptual model in Artificial Intelligence, Three-stage Framework into Porter's Five Forces. Each element in P5F including Threat of New Entrants, Bargaining Power of Supplier, Threat of Substitution, Bargaining Power of Customers and Degree of Rivalry are integrated with the Three-Stage Framework. The integration would enhance the content of P5F hence P5F would provide researchers to analyse the industry more effectively. Some underlying factors that may be hidden during research may be highlighted or observed by AI. Other than being more analytic, the model could be more predictive in analysing the level of

competitiveness and competitors' activities. Conceptually, the integration of the Three-Stage Framework into P5F would create a more possibilities for the market entrants, both suppliers and customers, substitutions, subsequently increases the degree of rivalry and ultimately enhances the attractiveness and profitability of an industry. Following the technological trend, the applications of Artificial Intelligence programs will generally enhance the marketing content in Porter's Five Forces that makes it more relevant in the current and future business environment. This study is currently limited to conceptual research, as the practicality of some AI functions are not yet matured. The conceptual integration of the Three-Stage Framework into P5F could be further discovered in specific industries for more empirical results.

Keywords: *Artificial Intelligence, Porter's Five Forces, Three-Stage Framework*