

Digital Procurement Maturity across Kraljic Categories: A Pharmaceutical Industry Case Study

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Abstract

Digital procurement has become an essential enabler for improving efficiency, transparency, and supply risk management in increasingly complex and highly regulated supply chains. Despite the growing adoption of digital tools, many organizations still face challenges in assessing their digital procurement maturity and in prioritizing digital initiatives that align with procurement strategies. This issue is particularly critical in the pharmaceutical industry, where procurement decisions directly affect regulatory compliance, product quality, and supply continuity. This study aims to address these challenges by proposing a Digital Procurement Maturity Framework integrated with the Kraljic Matrix, providing a practical and structured approach for guiding digital procurement transformation. The proposed framework is based on a process maturity perspective, in which digital procurement capabilities evolve progressively from basic transaction automation to advanced, data-driven, and collaborative practices. The Kraljic Matrix is applied as a strategic lens to differentiate digital procurement requirements across procurement categories according to supply risk and profit impact. By integrating digital maturity assessment with procurement categorization, this study investigates how digital procurement maturity influences procurement efficiency and risk management across different Kraljic quadrants, identifies the digital capabilities required at each maturity level, and explores the key challenges associated with implementation in a highly regulated environment. A qualitative case study approach is employed within a pharmaceutical manufacturing organization. Data are collected through semi-structured interviews with procurement professionals, internal procurement performance records, and process documentation. Procurement performance is evaluated using key indicators, including procurement cycle time, manual processing rate, purchase order accuracy, supplier on-time delivery, and compliance deviation. The targeted results indicate that higher digital procurement maturity can lead to a 20–30% reduction in procurement cycle time, a 30–50% decrease in manual processing activities, and a 10–20% improvement in supplier delivery performance, with the most significant benefits observed in strategic and bottleneck procurement categories. The study concludes that aligning digital procurement maturity with the Kraljic Matrix provides a clear and easy-to-understand framework for prioritizing digital initiatives, supporting the development of a focused digital procurement roadmap that enhances operational efficiency, supply resilience, and regulatory compliance.

Keywords

Digital Procurement, Procurement Maturity, Kraljic Matrix, Procurement Strategy, Pharmaceutical Industry.