AI-Native Contextual Decision Systems in the CPG Industry: Designing Human-Centered Market Performance and Consumer Insights with the Lawler Motivation Model

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Abstract:

The Consumer-Packaged Goods (CPG) industry operates across omni-channel environments including brick-and-mortar retail, direct-to-consumer (DTC), e-commerce platforms, and away-from-home (AFH) channels. Globally, the CPG market is valued at approximately USD 3.45 trillion in 2025 and is projected to exceed USD 4.24 trillion by 2030 at a compound annual growth rate of about 4.2%. Despite this scale, industry faces mounting challenges such as inflationary pressures, fragmented data ecosystems, and rapidly evolving consumer expectations for personalization across channels. Traditional business intelligence (BI) frameworks are limited in their ability to unify these signals into contextual, explainable, and action-oriented intelligence for commercial and consumer insights. To address this gap, we introduce the concept of AI-Native Contextual Decision Systems— an integrated architecture that blends generative AI, causal inference, multimodal data fusion, natural language processing (NLP), retrieval-augmented generation (RAG), semantic search, and explainability to deliver persona-driven intelligence. Our framework is grounded in Lawler's Motivation Model, emphasizing Valence (linking insights to KPIs and incentives), Expectancy (building confidence through transparent causal evidence), and Instrumentality (mapping actions to measurable business and personal outcomes). By embedding human-centered design principles alongside advanced AI techniques, the framework ensures systems not only deliver technical accuracy but also drive adoption by enhancing user motivation, trust, and participation. Drawing on real-world CPG case studies in promotional optimization, perfect store execution, and consumer demand sensing, we demonstrate how contextual decision systems can reduce time-to-insight, improve ROI, and anticipate consumer shifts. This work contributes to academic research by extending the literature on decision support systems with a motivational design lens and serves as a practical blueprint for industry adoption, ultimately arguing that AI-native contextual decision systems represent not just an evolution of BI, but a foundational shift in how CPG organizations think, decide, and grow in an AI-driven world.

Keywords:

Artificial Intelligence (AI), Natural Language Processing (NLP), Generative AI, Retrieval-Augmented Generation (RAG), Semantic Search, Causal Inference, Explainable AI (XAI), Business Intelligence (BI), Decision Support Systems, Sales Intelligence, Consumer Insights, Human-Centered Design, Lawler Motivation Model.