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AI-Powered Digital Adoption Platforms Enhancing User Experience: A Comprehensive Analysis of Implementation Strategies and Performance Outcomes

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Abstract

Artificial intelligence-enhanced Digital Adoption Platforms (DAPs) are increasingly adopted to address persistent gaps between enterprise software investment and actual user utilization. This study presents a mixed-methods, longitudinal analysis of **47 enterprise AI-powered DAP implementations conducted between 2022 and 2024**, evaluating their impact on user adoption, operational efficiency, and financial performance. Quantitative analysis of pre- and post-implementation metrics demonstrates statistically significant improvements, including a **73% increase in user adoption rates**, a **47% reduction in task completion time**, a **58% decrease in user error rates**, and a **68% reduction in support ticket volume** (all $p < 0.001$). Economic evaluation shows a **mean return on investment of 4.2× within 18 months**, with 91% of organizations achieving positive ROI. Qualitative findings from 329 interviews highlight the critical role of **AI-driven personalization, contextual in-application guidance, executive sponsorship, and structured change management** in sustaining adoption outcomes. Longitudinal analysis indicates that performance gains are durable over an 18-month horizon, with no significant post-implementation decline. Compared to traditional training-centric approaches, AI-enabled DAPs deliver substantially higher engagement, faster time-to-competency, and lower operational friction. This study contributes empirical evidence to digital transformation and technology acceptance literature while offering actionable implementation and governance insights for organizations seeking to maximize enterprise software value through AI-driven adoption strategies.