

Chapter 9

Enhancing Organizational Performance Through Process Performance Measurement and KPIs in AI-Based Digital Transformation

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ABSTRACT

In an era featured by technological disruption and the pervasive integration of artificial intelligence (AI) into business processes, organizations come across strategic challenges in assessing their readiness for AI-based digital transformation. This study emphasizes on the necessary elements needed to analyse an organization's current state in preparation for AI-driven digital transformation. Drawing from a comprehensive literature review and practical insights derived from industrial system engineering experience, this study focuses on the relevance of process performance measurement and Key Performance Indicators (KPIs) in increasing organizational performance within the context of AI adoption. By establishing and monitoring relevant KPIs for process performance, organizations can quantifiably assess operational efficiency, identify areas for improvement, and track the effect of AI implementation on business processes.

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1. INTRODUCTION

In the rapidly developing landscape of the modern world, artificial intelligence (AI) is not merely a tool; it provides as the catalyst for a profound revolution. This paper is witnessing the dawn of a new era where businesses are not just embrace to change but thriving in it. This marks the age of AI-driven metamorphosis, where what was once considered mundane transforms into the extraordinary, and the extraordinary becomes the new norm. In the global arena of enterprises, the relentless pursuit of innovation stands as a cornerstone objective propelling organizations to strive for competitive supremacy and deliver unparalleled value to their stakeholders.

Within this dynamic context, a transformative impetus develops – the seamless integration of artificial intelligence (AI) into the core of business operations. This convergence shows more than mere technological advancement; it embodies a fundamental shift known as AI-based digital transformation (Goła, b-Andrzejak, 2023). This transformation reshapes the very fabric of how organizations function, make decisions, and engage with their stakeholders (Kim & Kim, 2022). Imagine a world where information is much important, where huge amounts of data help us see hidden patterns easily, and where difficult jobs are done automatically and really well. It is not just about using AI but it is like conducting a beautiful orchestra of ideas, making hard tasks easier, making customers really happy, and sparking lots of new ideas.

Digital transformation, on the other hand, includes integrating digital technologies into all facets of an organization, fundamentally altering how it operates and delivers value. This entails reimagining business models, processes, and services to harness the power of digital technologies like cloud computing, data analytics, the Internet of Things (IoT), and AI. AI-based digital transformation takes this concept a step further by focusing specifically on leveraging the full potential of AI technologies to instigate organizational change and achieve strategic objectives. It presents a strategic approach that harnesses the power of AI to drive organizational change, deliver transformative outcomes, and revolutionize how organizations operate, make decisions, and interact with customers, ultimately leading to enhanced productivity, agility, and innovation (Bogers et al., 2022; Gill et al., 2022)

By integrating AI technologies into business processes and systems, organizations can increase human capabilities, automate tasks, derive valuable insights from data, and make data-driven decisions. This empowerment enables organizations to streamline operations, increase efficiency, optimize resource allocation, and create personalized experiences for their customers (Ancillai, C. et al., 2023). Leveraging AI capabilities allows organizations to gain valuable insights from their data, automate repetitive tasks, and make more informed decisions, leading to improved

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