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Emerging trends of knowledge management in organizations (2)

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DIGITAL TRANSFORMATION FRAMEWORK FOR SMALL SATELLITE MISSIONS: NSSA'S CASE
STUDY IN PROJECT AND KNOWLEDGE MANAGEMENT

Abstract

In recent years, space has gained attention rapidly, and digital transformation has positively impacted the space industry. In a digital era, digital transformation is an organization's adoption of digital technologies to digitize products, services, or operations. Although implementing digital transformation has numerous benefits, it has various challenges and difficulties that are unique to the workplace depending on its culture, available infrastructure, processes, and existing tools, and following implementation, many risks are associated with the newly implemented framework. This research presents a recommended digital transformation framework for small satellite mission management based on lessons learned and best practices considering the practical experience of several space-related entities. Different space entities have been interviewed to conduct the study and introduce the adopted digital transformation framework for small satellite missions of Bahrain's National Space Science Agency (NSSA) as a case study. Moreover, the proposed framework organizes, stores, and disseminates information within projects, achieving better decision-making and encouraging cooperation amongst its project team. This paper presents key elements of digital transformation, including NSSA's project data, collaboration amongst project stakeholders, administrative processes such as project management, application of artificial intelligence to generate useful information from data, tools adopted, and culture adapted throughout the project. In addition, it introduces the steps taken by NSSA to embrace digital transformation barriers while implementing the framework and response plans to proposed risks.