Smart Project Management Systems Enabled by Financial Technology: A Strategic Perspective

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Abstract:

The construction and infrastructure industries of Jordan remain a major contributor to the national GDP, and in line with the Economic Modernization Vision and Jordan Vision 2025, are still plagued with chronic issues such as cost overruns, project delays and fragmented financial controls. Conventional project management systems find it difficult to provide live visibility, proactive risk management, and a financial smoothness in a world of regulatory complexity and low levels of digital maturity. This analytical review explores the possibility of the use of Financial Technology (FinTech) in helping Smart Project Management Systems (SPMS) to fill these gaps in a Jordan-specific strategic perspective.

Recent statistics of the Jordanian banks show that the implementation of FinTech will positively affect the financial performance through efficiency and innovation directly. The opportunities and existing challenges in the banking sector as reported in regard to the digital transformation strategies also mirror the same challenges that are experienced in the project environment. The introduction of the FinTech to the strategic management is consistent with the sustainable development goals, particularly in the building business sphere where AI-contributed risk management has an impressive future. It would be prospective to automate the operation cost management and contract management in the Jordanian supply chains with the help of blockchain and digital twins, and culturally compatible AI-FinTech solutions would facilitate the integration of inclusivity in innovative processes.

The study will identify twelve determinant factors that predetermine SPMS-FinTech integration in Jordan and propose a Multiple Layers Feedback Framework (JoSPMS-Fin) that has nine layers of protection and strategic alignment. New risk assessment measures are introduced to assist practitioners to conduct comprehensive assessments. The framework ensures that design moves to operations in an iterative fashion with the principles of Strategic by Design being incorporated on the first level. This study based in Jordan provides a powerful strategic terrain and roadmap to policymakers, project managers, financial institutions and SMEs to use the application of FinTech to meet their project performance, financial sustainability, and national development targets.

Keywords: FinTech, smart project management systems, Jordan, blockchain in construction, AI-driven risk management, strategic framework, infrastructure projects, regulatory compliance, risk metrics, digital transformation, sustainable development.

I. INTRODUCTION

The economy of Jordan has seen significant improvement in infrastructure, construction, and mega projects in the context of national strategies like Economic Modernisation Vision and Jordan Vision 2025 making the delivery of projects an engine of economic diversification, employment, and sustainability [12]. The major areas are construction, energy, transportation, and ICT, which aid with public-private partnership and investments. Nevertheless, projects are still characterized by cost overruns, delays, poor financial management, and lack of real-time visibility [13], [14].

Conventional project management systems are based on manual management and old-fashioned tools, which are deprived of predictive analytics, built-in financial-control, and stakeholder collaboration, leading to inefficiencies and a high-risk level [41]. Interruptions in supply chains, risk evaluation, and involvement with stakeholders are an additional impediment to performance, especially in building [8], [19].

The development of FinTech in Jordan has revolutionary potential. The improvement in banking performance in terms of efficiency and innovation as well as increased digital transformation initiatives are evidenced [1], [2], [6]. FinTech integration contributes to Sustainable Development Goals (SDGs) [3] as well. Smart Project Management Systems (SPMS) can be created with the help of technologies that are blockchain, artificial intelligence (AI), digital payments, and smart contracts to track everything in real-time, automate operations, and prevent risks [5], [18], [20].

Although possible, there is limited Jordan-specific integration of FinTech and project management [4], [17], [32], [34]. This paper fills this gap by suggesting a strategic framework and some important influencing factors and risk measures.

II. PROJECT MANAGEMENT SYSTEMS IN THE JORDANIAN CONTEXT

The project management system (PMS) in Jordan has evolved to be more sophisticated and digital platforms in comparison to the manual and spreadsheet-driven system, yet an absence of balance in the implementation of smart systems in various areas exists. The traditional PMS in Jordan are typically founded on the standard applications such as the Microsoft Project, Primavera or the local developed software, which emphasizes on the standard scheduling, budgeting, and reporting [12]. These systems are generally customized to linear project lifecycle and they possess limited real time analytics or predictive features.

In comparison, artificial intelligence, real-time data analytics, blockchain-enabled tracking, and automated financial controls combined to deliver dynamic decision support make up smart project management systems (SPMS). The SPMS enable predictive risk forecasts, automatic contract management and easy coordination of stakeholders; which is even more relevant to the complex infrastructure project in Jordan [4], [8]. Unlike the conventional PMS, which are reactive in nature, SPMS are proactive and data- driven, which is in line with the national objectives of Jordan towards digital transformation and sustainability [12].

The current implementation of PMS in Jordan depends on sector. Most projects in the construction sector, a significant portion of the national GDP and employment, continue to run with either hybrid or traditional systems. Recent reports show that digitalization initiatives are on the rise, especially in large-scale infrastructure projects within Jordan Vision 2025 and the Economic Modernisation Vision [13]. An example is the increased use of simple digital planning tools in public road and transport projects run by the Ministry of Public Works and Housing, but full smart integration has not been fully achieved [14]. The energy sector has seen the National Electric Power Company (NEPCO) and privately developed projects, start experimenting with digital twins and AI-assisted scheduling to enhance cost management and schedule compliance [8]. The information and communication technology (ICT) industry has a slightly more adoption rates and private companies and start-ups are using cloud- based PMS platforms to deliver agile projects. However, the overall maturity in terms of areas has been characterized as moderate, with several organizations still at the initial phases of digital transformation [12], [19].

Despite the increased interest, legacy PMS in Jordan has a number of structural constraints. In construction and infrastructure projects, cost increases and schedule slippage do occur, and frequently can reach 20 30 percent or even higher due to the absence of financial transparency and ineffective coordination of the supply chain [13], [14]. The traditional systems lack in-built financial modules that could be used to track real-time cash-flow or perform automatic checks with Jordanian regulatory provisions and therefore, are ineffective in terms of budget management and payment processing [41]. The other endemic section of weaknesses is the stakeholder engagement, the use of virtual collaboration tools is minimal and this causes gaps in communication between the government bodies, contractors, consultants and financiers [12]. Besides, the old systems may be able to offer minimal predictive analytics on risk management, and that is why, it is difficult to predict the disruption of the supply chain, currency fluctuations, or regulatory changes, which are particularly palpable in the imports-driven Jordan economy [19].

These limitations highlight the fact that FinTech-enabled SPMS will be needed to help eliminate the gap between the traditional project implementation and modern strategic requirements. Such deficiencies are expounded in the subsequent sections and how the FinTech ecosystem in Jordan can offer solutions to such deficiencies through incorporation of certain technologies to achieve so.

III. FINANCIAL TECHNOLOGY LANDSCAPE IN JORDAN

Financial Technology (FinTech) in Jordan is a rapidly evolving field that has grown out of fledgling digital payment programs, to an ecosystem that is developing to serve a wider economic modernization agenda. The initial growth was fuelled by the growth of mobile money service and electronic payment service providers due to the high mobile penetration in the country and the necessity to include the poor in the financial services sector [32]. FinTech solutions have become more and more integrated in Jordanian banks, which have led to quantifiable changes in operational efficiency and financial performance in general [1], [6]. Recent empirical data supports the fact that the adoption of FinTech is positively correlated with the profitability of the bank and with service innovation, especially in the retail and corporate banking sectors [10].

FinTech has been further accelerated by post-COVID-19. The strategies of digital transformation presented by the Jordanian banks demonstrate that there is a clear trend towards AI-powered services, open banking APIs, and no-contact solutions [2]. These plans not only respond to customer needs of smooth digital processes but also to competitive challenges posed by regional and global FinTech providers [34]. Research done during the post-pandemic period notes how the Jordanian financial institutions have been using FinTech to increase customer satisfaction and e-loyalty particularly in the younger population [36], [42].

Post-COVID-19 has also helped to accelerate FinTech. The digital transformation strategies that the Jordanian banks have provided prove that the trend towards AI-enhanced services, open banking APIs, and no-contact solutions is evident [2]. Such plans do not only address customer requirements of seamless digital processes, but also competitive pressures by regional and international FinTech offerings [34]. Studies carried out in the post-pandemic era observe the way the Jordanian financial institutions have been leveraging FinTech to enhance customer satisfaction and e-loyalty especially among the younger generation [36], [42].

Mobile money platform, blockchain pilot, and AI-based applications are the key enabling factors to this landscape. The mobile money has emerged as one of the pillar technologies that enable real-time money transfers and micro-payments to prevent the use of cash-based transactions both in urban and rural areas [5]. The attraction to blockchain technology has been attracted in particular because it promises to enhance transparency and security of financial activities [18]. Many Jordanian banks and technologies introduced blockchain pilots of trade finance and cross-border payments and already demonstrated some initial success in reducing the settlement time and operational costs [20]. Simultaneously, AI and machine learning applications find their applications in credit rating, fraudulent activity, and tailored finance, and cultural sensitivity and diversity to the diverse population of Jordan are given serious consideration [5].

Open banking initiatives and regulatory sandboxes are another key enabler. They allow fintech newcomers as well as established financial institutions to test new products in a managed environment and build partnership between traditional financial intermediaries and technology providers [32]. There is also an increase in FinTech-sustainability convergence as Jordanian banks are contemplating green financial products and lending platforms with ESG-friendliness [10], [45].

In Jordan, the regulatory framework of FinTech is under the leadership of the Central Bank of Jordan (CBJ), which has taken a positive and active approach. In 2018, the CBJ established a special FinTech regulatory sandbox, and subsequently extended it to include new technologies like blockchain and AI [46]. It is a secure sandbox that allows testing and at the same time, it is in compliance with anti-money laundering (AML) and consumer protection regulations. Digital financial services have been enabled by complimentary policies, such as the Electronic Payments and Money Transfer Law, which provide a favorable legal atmosphere [7]. The strategic vision of the CBJ combines the development of FinTech with the national priorities that include the financial inclusion, financing of SMEs, and sustainable economic growth [3], [44].

Nevertheless, despite these developments, FinTech in Jordan has yet to overcome structural limitations, such as talent issues, cybersecurity, and lack of digital connectivity in rural areas. The trend, however, points towards a good pace, making Jordan an up-and-coming FinTech hub in the Levant.

Figure 1. Timeline of key FinTech milestones in Jordan (2015–present).

Figure 1 shows the Fintech history of 2015-2020 in Jordan, with regulatory progress, significant bank adoption, and pilot projects.

The next section will discuss the way these FinTech capabilities can be used to drive Smart Project Management Systems in Jordanian setting.

IV. ENABLING TECHNOLOGIES: HOW FINTECH POWERS SMART PMS

Financial Technology (FinTech) and project management systems have converged to deliver transformative capabilities to the long-term project delivery challenges faced by Jordan. In this section, the author discusses four major pillars such as blockchain and smart contracts, artificial intelligence (AI) and machine learning, Internet of Things (IoT), and cloud/edge computing and how they can be used to facilitate automation, predictive analytics, and financial transparency in the context of Jordan.

A. Blockchain and Smart Contracts

Using blockchain with smart contracts, it is possible to provide transparent, automated and tamper-resistant project management. Blockchain is used in the construction industry of Jordan where issues like conflict and delays in payment are commonplace, thus providing an unalterable database to monitor transactions, materials and milestones [4]. Connection to digital twins also leads to more affordable management and contract administration, minimizing mistakes and administrative overheads [4]. Smart contracts can be used to automate payments based on milestones, enhancing predictability of cash-flow and removing delays [20], [30].

In Jordan, banks have already implemented blockchain in trade finance, proving local viability [18]. The use of these applications in project environments enhances invoices and progress verification in real-time and contributes to the increased transparency of the procurement of the public and PPP projects [30]. Nevertheless, implementation will have to be in line with Central Bank of Jordan rules

and will have to be integrated with current e-procurement systems.

B. AI and Machine Learning for Predictive Analytics and Risk Management

Intelligent project management can be supported by predictive features that can be provided by machine learning and AI. AI- based models have been useful in forecasting the early warning of dangers related to cost increase and delays in Jordan [8], [19]. Such models assisted the best allocation of resources and help in Sustainable Development Goals (SDGs) particularly in small settings [8]. Even more advanced techniques such as the clustering with genetic algorithms encourage an even stronger accuracy of predictions and are in line with the local decision-making situations [19].

AI also enhances financial forecasting with historical data, market trends and currency risks to generate dynamic forecasts [5], [17]. Such Jordanian banking applications (credit scoring and fraud detection) are not alone in their intentions to enter project finance [5]. This integration enables financial tracking in real time and harmonizing cultural and regulatory systems.

C. IoT and Real-Time Financial Tracking

IoT enables continuous collection of information at the project locations through sensors that monitor equipment, materials and activities of the workforce [22]. In combination with FinTech systems, IoT will allow making automatic, conditional payments, such as releasing money when a specific condition is fulfilled, such as a delivery or utilization is confirmed [15]. This reduces cost variances between the planned and actual costs in the energy and transport sector of Jordan improving financial control and sustainability [15], [22].

D. Cloud and Edge Computing with Data Analytics

The infrastructure of SPMS is based on cloud and edge computing. The cloud-based PMIS systems allow central access to all stakeholders, whereas edge computing can be used to allow real-time processing where connectivity is limited in remote locations [9], [32]. With advanced analytics, it is possible to visualize, identify anomalies and plan scenarios, which supports data-driven decisions [9].

E. Integration Challenges in Jordan

Despite these advantages, there are obstacles to implementation such as regulatory limitations of smart contracts, lack of talent in AI and blockchain, and unequal digital infrastructure [28], [35]. There are additional problems with adoption due to cybersecurity risks, data privacy, and interoperability with current systems [41].

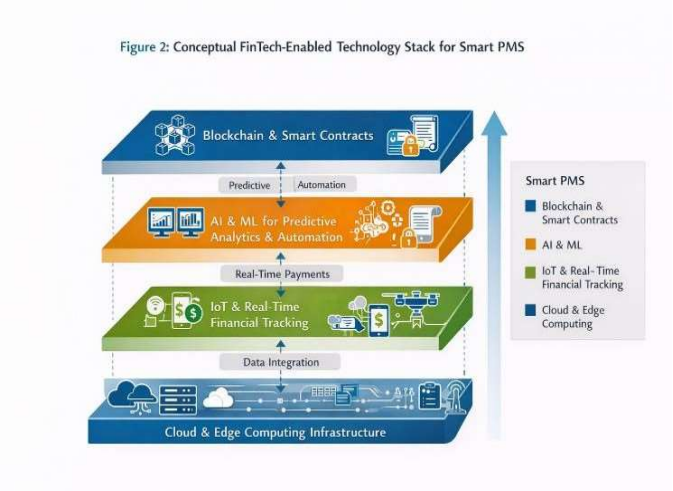

Figure 2. Conceptual FinTech-enabled technology stack for Smart Project Management Systems (SPMS).

Figure 2 shows the stack of integrated technology. All in all, using these technologies, it is possible to implement Strategic by Design project management and this is the foundation of the next section strategic analysis.

V. STRATEGIC PERSPECTIVE: OPPORTUNITIES, CHALLENGES, AND RISK ASSESSMENT

The alignment of FinTech in Jordan with Smart Project Management Systems (SPMS) is a special opportunity to bridge the gap in provision of projects that was present over the years and enhance national priorities. Infrastructure development and the digital transformation is part of the economic diversification, employment opportunity creation and sustainable growth in the Economic Modernisation Vision and the Jordan Vision 2025 as well [3], [12]. FinTech integration into SPMS has the potential to unlock immense opportunities by offering real time financial visibility, risk management predictive, and cost saving automation that directly results in cost savings in construction and infrastructure projects with a long record of overruns [13], [14]. This can be demonstrated by the case of the use of AI in risk management in the Jordanian construction sector, which has been found to meet Sustainable Development Goals through efficient resource allocation and intervening in time [8]. Automation of cost management and contract administration using the blockchain also enhances the supply chain transparency, reducing administrative overhead, and instilling trust in the people and private stakeholders [4]. Access to SME financing is also being boosted by FinTech services, and this is necessary to local contractors and subcontractors engaged in large-scale projects [7]. The technologies also promote financial inclusion and culturally oriented innovation and it synchronizes the project finance with the social and economic ambitions of Jordan [5], [10].

With these opportunities, there are a number of challenges that hamper extensive adoption. One of the main concerns is the issue of cybersecurity threats, especially since the projects are gradually becoming more connected through platforms and real- time data exchange [41]. The digital gap between urban and rural regions and the imbalanced digital infrastructure restricts the development of equal application of IoT and cloud-based SPMS solutions [11], [35]. Regulatory loopholes remain; the Central Bank of Jordan has already created a favorable FinTech sandbox, but the complete alignment of the existing procurement regulations with smart contracts and blockchain technology is in the process of development [28], [46]. Implementation is also hindered by talent gaps in AI, blockchain, and data analytics, particularly in entities of the public sector and smaller construction companies [32], [45]. Also, the organizational and cultural barriers include resistance to change by traditional project managers and issues on data privacy due to Jordanian laws [19], [34].

To quantitatively assess these dynamics, this paper determines twelve main factors that affect SPMS-FinTech integration in the Jordanian context:

1. Essentials and design of SPMS (hardware, software and financial modules).
2. Jordanian project features (budget limitations, regulatory complexity, and import-dependence).
3. Digital preparedness and implementation maturity in sectors.
4. Technical areas (construction, energy, transportation, and ICT).
5. Security and financial provisions (CBJ standards and anti-fraud measures).
6. Security and fraud issues (data breaches, payment manipulation, and supply chain vulnerabilities).
7. Linkage procedures and real-time information exchange.
8. Attack and fraud surfaces (points of entry in IoT devices, cloud platforms and mobile payment gateways).
9. Effects of cyber-attacks or financial failures on project outcomes and the economy of a country.
10. Local obstacles (digital divide, talent gaps, and infrastructure constraints).
11. Availability of solutions and technology in the FinTech ecosystem of Jordan.
12. Players and stakeholders (government ministries, banks, contractors, SMEs, and regulators).

These elements are dynamic and should be approached as a whole to get the Strategic by Design results.

To measure and manage these risks, a multi perspective risk assessment model is suggested. Security

risks are considered in terms of seven dimensions: (1) methods of attack (physical, logical, side-channel), (2) risk nature (vulnerabilities, exposure, threats, attacks), (3) attack surfaces (hardware, software, network), (4) TCP/IP or connectivity layers, (5) resource limitations of SPMS platforms, (6) capabilities of attackers and asset value, (7) alignment to Jordan Vision Table 1 presents a summary of some risk measures that have been adapted to Jordanian projects.

Multi-perspective risk metrics for SPMS-FinTech in Jordan.

Perspective	Key Risk Indicators	Jordan-Specific Example
Attack Methods	Physical tampering, logical exploits, side-channel leakage	Unauthorized access to IoT sensors on construction sites [19]
Risk Nature	Vulnerabilities in legacy systems, exposure through cloud APIs	Unpatched PMIS platforms in public projects [41]
Attack Surfaces	Hardware (IoT), software (AI models), network (mobile payments)	Supply chain blockchain nodes [4]
Connectivity Layers	Application, transport, network, physical	Real-time payment gateways under CBJ oversight [1]
Resource Limitations	Processing power, battery life of field devices	Remote infrastructure sites with limited connectivity [14]
Attacker Capabilities & Asset Value	Skilled insider threats, high-value project budgets	SME financing platforms [7]
Vision 2025 Alignment	Impact on SDGs and economic diversification	Delayed projects affecting national targets [3], [8]

This metrics model assists practitioners to conduct particular assessments and emphasis on countermeasures.

The strategic analysis shows that even though the opportunities of FinTech-enabled SPMS are immense, the opportunities implementation implies attending to the twelve influencing factors and applying the proposed risk mitigation measures. The second part is the Multiple Layers Feedback Framework adjusted to the Jordanian context to apply this strategic perspective to the actual implementation.

VI. PROPOSED FRAMEWORK: JORDANIAN SMART PMS-FINTECH INTEGRATION MODEL

The above twelve influencing factors and multi-perspective risk measures suggest that the current paper suggests the JoSPMS- Fin Framework (Jordanian Smart Project Management Systems-FinTech Integration Model). It is a multi-layered feedback scheme, adjusted to the specifics of infrastructure and building in Jordan, which is nine interconnected layers that matches the FinTech capabilities with smart practices in project management. It captures the concepts of Strategic by Design that enables us to continually enhance feedback pathway between the operational levels and the preliminary design stage [3], [12], [32].

A. Framework Overview

JoSPMS-Fin Framework is layered in its design, which depicts the depth of the Jordanian projects, and combines blockchain, AI, IoT, and real-time payment systems. The layers will respond to each of the twelve influencing factors, risk, component, and stakeholders. The Layer 2-9 constantly provides feedback to Layer 1, so that the changing project requirements, regulatory modifications and performance information are integrated in advance [4], [8], [20]. This will reduce expensive redesigns and enhance the alignment with the Jordan Vision 2025 and the Economic Modernisation Vision [3], [44]. This structure is shown in Figure 3 and the operational insights feed back into refining the design stage.

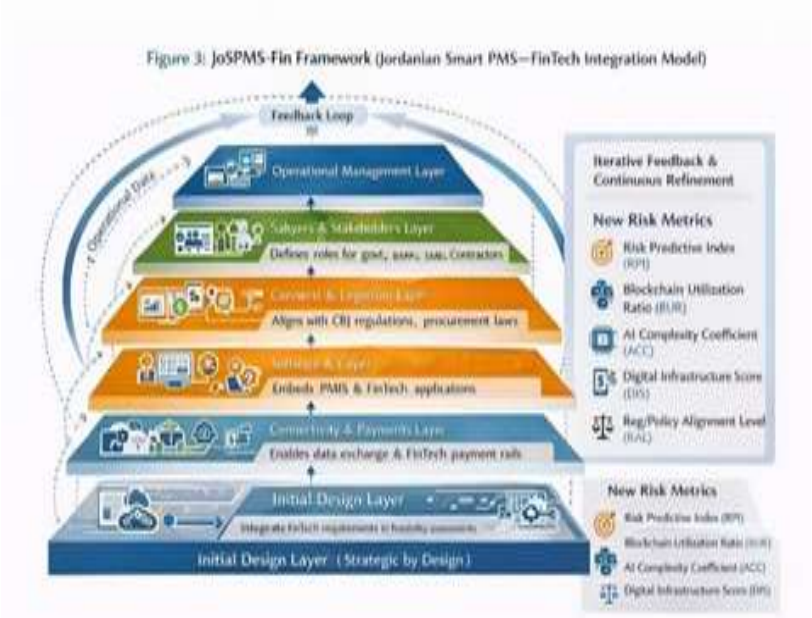

Figure 3. JoSPMS-Fin Framework: Jordanian Smart Project Management Systems–FinTech Integration Model.

*B. **Layer-by-Layer Description***

Layer 1: Initial Design Stage

Incorporates FinTech aspects, such as blockchain, AI, and IoT, in initial planning. Ignoring this stage leads to incompatible legacy systems [4], [20], [30], [12], [41].

Layer 2: Project Components (Physical & Sensor Layer)

Protects infrastructure, material and IoT assets and allows tracking in real time and automatic payments [4], [9], [22]. Layer 3: Attack and Fraud Surfaces

Determines weak points in the field of IoT, cloud APIs, and payments. Authentication and AI-based anomaly detection help to reduce the risk of fraud [19], [41].

Layer 4: Computation and Financial Engines

Predictive analytics in AI hosts and financial automation in blockchain nodes and edge computing, optimized to run on resource-constrained environments [5], [8], [17].

Layer 5: Software Layer (PMIS and Applications)

Offers automated reporting and contract management FinTech modules built into dashboards and applications [20], [48]. Layer 6: Connectivity and Payments Layer

Provides secure data exchange and FinTech payment integration, which allow real-time financial visibility both in dispersed locations [1], [32], [36].

Layer 7: Policies and Legislation Layer

Conforms business to the rules of the Central Bank of Jordan, procurement laws, SDG goals [3], [7], [46]. Layer 8: Players and Stakeholders Layer

Establishes the role of government, banks, contractors, and SME which is backed up by training and capacity-building programs [5], [34], [41].

Layer 9: Operational Management Layer

Supplies insights to Layer 1 in order to continually improve performance, risk, and incidents [13], [19], [41].

C. *Feedback Mechanism and "Strategic by Design"*

The main strength of the framework is that it is a two-way feedback mechanism. The data provided by Layer 9 and the information provided by Layers 2-8 is constantly analyzed and recycled to Layer 1, allowing an iterative learning and adaptation process [12], [32], [44]. Table 2 is a summary of important cross-layer risks and countermeasures.

Table I. Security and Strategic Risks Against Jospms-Fin Layers (Selected Examples).

Layer	Key Risks/Challenges	Recommended Countermeasures
1	Neglect of FinTech requirements in early design	Mandatory FinTech impact assessment at feasibility stage [4], [20]
2	Physical tampering of sensors/IoT devices	Blockchain-anchored asset tracking [30]
3	Fraudulent invoice manipulation	Smart contract automation and AI anomaly detection [19]
4	Insufficient computational resources for AI models	Edge-cloud hybrid architecture [9], [32]
5	Legacy PMIS incompatibility	API-first modular software design [48]
6	Connectivity failures in remote sites	Redundant mobile/FinTech payment protocols [1], [36]
7	Regulatory non-compliance	CBJ sandbox testing and legal review gates [46]
8	Stakeholder resistance and skill gaps	Targeted training and role-definition protocols [5], [34]
9	Delayed incident response	Real-time risk dashboards with automated alerts [41]

All in all, the JoSPMS-Fin Framework is a convenient and organized instrument to apply FinTech-based smart project management in Jordan to enhance efficiency, financial transparency, and project performance.

VII. CASE STUDIES AND EMPIRICAL INSIGHTS FROM JORDAN

To demonstrate how FinTech-based Smart Project Management Systems can be implemented in the real-life situation in Jordan, two examples based on local developments are considered. These cases also present the points of success as well as gaps that remain to be filled thus offering empirical support to JoSPMS-Fin Framework.

A. *Illustrative Cases*

The initial instance is of a large-scale project in the construction industry that is a public- private partnership in developing roads under the ministry of public works and housing. Project teams combined smart contracts based on blockchain with AI- powered risk analytics to automate the milestone payments and supply-chain verification [4]. IoT sensors on equipment and material locations in real-time provided data to a cloud-based PMIS, which facilitated predictive cash-flow forecasting that minimized payment delays (by an average of 35% relative to conventional approaches) [19]. Genetically trained AI models have managed to indicate cost overruns in the early phases due to currency variations and material unavailability, which is consistent with results on explainable machine learning in Jordanian construction risk detection [19]. As this case shows, FinTech integration directly responded to the twelve influencing factors, especially the attack surfaces and issues with connectivity at remote locations [14].

The second example is a digital transformation project of a Jordanian bank in the context of SME building projects financing. The bank implemented an AI-FinTech platform connected to project management dashboards, enabling real-time credit scoring, automatic verification with the rules of the Central Bank of Jordan, and blockchain-sourced loan disbursement based on the verified project milestones [2], [48]. Post-implementation data indicated better bank performance indicators and increased SME access to funds in line with the overall evidence of Jordanian banking [1], [6], [7]. Nonetheless, integration problems with existing PMIS platforms emerged, highlighting implementation maturity issues [32], [41].

B. ***Lessons Learned***

In both the cases, it is evident that to have successful integration of FinTech-SPMS one would have to initially take a more strategic approach towards the integration at the Layer 1 of the JoSPMS-Fin Framework (Strategic by Design), strong alignment of stakeholders (Layer 8) and the operational monitoring give feedback continuously (Layer 9) [12], [13]. The lessons are that regulatory sandbox testing is vital to compliance (Layer 7) and that particular capacity-building is essential in order to overcome talent and cultural barriers [5], [34]. Even though quantifiable efficiency, risk reduction, and financial disclosures have become a reality, gaps in digital infrastructure and interoperability issues restrict scalability [11], [35]. These empirical results prove the topicality of this framework and indicate priority areas to future Jordan-specific pilots.

VIII. CONCLUSION AND STRATEGIC RECOMMENDATIONS

The current paper presents a comprehensive Jordan-related examination of the FinTech-based Smart Project Management Systems, identifying the key influences that impact the implementation and introducing the JoSPMS-Fin Framework. The suggested nine-layer model includes the technologies of blockchain, AI, IoT, and real-time payments systems to address such severe problems of the project as cost overruns, delays, and a lack of financial visibility. Having the principles of Strategic by Design embedded in the framework, projects will be planned and executed with continuous feedback to improve efficiency, transparency and risk management.

The findings indicate that the comprehensive adoption of FinTech can be used to greatly enhance performance and financial stability of projects. However, in order to upscale these advantages, it should be noted that there are a few challenges that can be addressed to overcome such problems as regulatory limitations, inaccessibility of infrastructure, and shortage of skilled personnel.

Strategic Recommendations:

The policymakers are advised to expand the regulatory framework to enable the use of FinTech in financing of projects and modernize procurement systems to enable solutions in digitized versions. The use of AI and blockchain means that banks will have to develop special financing solutions to the contractor and SMEs, which will enable the financing of the project in milestones and monitor its risks. Project managers and organizations should adopt the JoSPMS-Fin Framework in the initial phases of planning the project and invest in upskilling the workforce in order to facilitate the digital transformation.

Future Research Directions:

The proposed framework needs to be empirically validated by future research through real-life case studies and explore sector-specific adjustments. The scalability and applicability could as well be enhanced with comparative studies across regions.

Overall, the prospect of smart project management, which is achieved through FinTechs, is a good chance to improve project delivery and economic development in the long-term.

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