

# **Using the IRMC-V Framework to Bridge Risk Management and Customer Success to Maximize Project Outcomes**

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## **Abstract**

In the ever-evolving business landscape, software projects play a pivotal role in enhancing operational efficiency, reducing costs, and fostering customer satisfaction. Despite their potential, many software initiatives fail due to insufficient risk management and a lack of customer-centric strategies. This paper introduces the Integrated Risk Management, Customer Success Management, and Value-Driven KPIs (IRMC-V) framework, a comprehensive approach to addressing these challenges. The IRMC-V framework combines proactive risk identification, customer success planning, and key performance indicator (KPI) tracking to ensure project stability, customer satisfaction, and alignment with business objectives. Key components of the framework include detailed risk assessment, development of customer success strategies, and establishment of value-driven KPIs such as ROI, customer satisfaction scores (CSAT), and time-to-market (TTM). The framework also outlines actionable phases, from project initiation to closure, providing a structured roadmap for software deployment. By integrating these elements, the IRMC-V framework ensures data-driven decision-making, improved risk mitigation, and enhanced customer-centric value delivery. This approach empowers organizations to maximize their return on investment (ROI) and achieve sustainable project success in today's competitive market.

## **Keywords**

Risk Management, Customer Success Management, Key Performance Indicators (KPIs), Software Project Deployment, IRMC-V Framework, Value-Driven Decision Making, Project ROI, End-User Adoption

## **1. Introduction**

Organizations are continually seeking ways to improve operational efficiency, reduce costs, and enhance customer satisfaction. Software projects, a critical component of business operations, have been widely adopted to achieve these goals. However, the success of software projects is often hindered by inadequate risk management and failure to ensure customer-centric value delivery. Effective risk management is crucial for successful project outcomes, and customer-focused strategies can lead to increased customer satisfaction and loyalty.

Successfully deploying a software project involves more than just following a set of development steps—it requires comprehensive risk management, an effective customer success management plan, and a clear understanding of the project's value proposition. Key Performance Indicators (KPIs) play a critical role in measuring project success and ensuring that software projects deliver tangible business value. By identifying potential obstacles and addressing them early, organizations can maintain project stability and ensure that their software projects stay on course. Moreover, aligning software development with customer needs ensures that these initiatives lead to greater customer satisfaction and loyalty, which are vital drivers of business growth.

### **1.1 Objectives**

To address these challenges, this paper proposes a novel framework for deploying software projects that integrates risk management, customer success management, and value-driven KPIs. By proactively identifying and mitigating

risks, leveraging customer success management strategies, and tracking KPIs to measure project value, organizations can maximize the return on investment (ROI) of their software projects. This framework aims to provide a structured approach to managing risks, ensuring customer success, and ultimately driving business value through successful software project deployment.

## **2. Background**

In today's highly competitive and rapidly evolving business environment, software projects are pivotal in driving operational efficiency, reducing costs, and improving customer satisfaction (Kwak & Anbari, 2020; Gupta, 2018). As organizations undergo digital transformation, enterprise software solutions have become indispensable. However, despite their potential, a substantial number of software initiatives fail to meet their intended objectives due to fragmented risk management processes, weak adoption planning, and the lack of integrated value-tracking mechanisms (Chen, Tang, & Wang 2018). Conventional frameworks such as PMBOK and ISO 31000 offer structured guidance for risk identification and mitigation but do not systematically integrate these efforts with customer success or performance measurement strategies (Project Management Institute 2021). At the same time, Customer Success Management (CSM) has emerged as a crucial strategy, particularly in software-as-a-service (SaaS) and enterprise environments, focusing on driving customer value through sustained engagement and proactive support (Gupta, Kumar, & Sharma 2020; Jiju, 2018).

However, these models often operate in isolation, limiting their effectiveness in driving holistic project success. Meanwhile, performance tracking models such as Key Performance Indicators (KPIs) and Objectives and Key Results (OKRs) are typically used to evaluate project outcomes after deployment rather than as continuous decision-making tools embedded throughout the lifecycle (Antony, Snee, & Hoerl, 2021; Kumar, Scheer, & Steenkamp, 2019). Recent research by Tsai, Hsieh, and Chen (2022) supports the idea that integrating KPI tracking with customer engagement and risk mitigation enables a more agile and value-driven project environment. Recognizing the limitations of siloed frameworks, the Integrated Risk Management, Customer Success Management, and Value-Driven KPIs (IRMC-V) framework was developed to address these challenges holistically. The IRMC-V framework provides a unified model that integrates proactive risk assessment, customer success strategies, and value-based KPIs such as ROI, customer satisfaction (CSAT), and time-to-market (TTM) (Chen, Tang, & Wang, 2020; Tsai&Lin2021).

By embedding these components into every phase of the software deployment lifecycle—from project initiation to closure—the IRMC-V framework empowers organizations to align execution with strategic business goals, enhance stakeholder engagement, and facilitate data-driven decision-making (Tribby & Elshennawy, 2023). This integrative approach offers not only operational resilience but also a sustainable pathway to digital transformation and customer loyalty.

## **3. Literature Review**

This literature review aims to provide a comprehensive background to discover research gaps that could be feasibly addressed by the proposed methodology by (Bacca, 2014; McLean et.al., 2013) and adapted to this literature review, which follows the following flow:

Planning:

Database selection

Keyword selection

Keyword modifiers

Definition of inclusion and exclusion criteria of studies

Definition categories for the analysis

Conduct the review:

Study selection

Data extraction (Content analysis method applied)

Data synthesis

Reporting the review:

Analysis of results

Discussion of findings

Trends

Conclusions of the review

The following was the list of keywords selected:

- Risk Management
- Customer Success Management
- Key Performance Indicators (KPIs)
- Software Project Deployment
- IRMC-V Framework
- Value-Driven Decision Making
- Project ROI
- End-User Adoption

The deployment of enterprise software solutions remains a cornerstone of digital transformation, yet many projects fail to achieve their intended return on investment (ROI) due to fragmented risk management, insufficient customer engagement, and the lack of value-centric performance tracking (Kwak & Anbari, 2020; Chen, Tang, & Wang, 2018). Modern frameworks must transcend traditional project management boundaries and integrate cross-functional strategies that align risks, customer success planning, and business value. The proposed IRMC-V framework—Integrated Risk Management, Customer Success, and Value-Driven KPIs—emerges as a structured approach to address these issues holistically.

### **3.1 Risk Management in Software Projects**

Software project risks span technical, organizational, and stakeholder domains. According to Carvalho and Rabechini (2019), ineffective risk planning often leads to scope creep, delayed timelines, and cost overruns. The Project Management Institute (2021) further emphasizes that early-stage risk identification coupled with continuous reassessment is key to maintaining project stability. These findings are echoed in systematic reviews by Kwon, Lee, and Lee (2020) and Chen et al. (2020), who argue for integrated frameworks that address both technical and behavioral aspects of risk. Tsai et al. (2020) explored AI-based models for risk detection in IT project environments, proposing that dynamic risk evaluation enhances decision-making. Their work supports integrating risk prediction and mitigation protocols within agile delivery models. This aligns with the IRMC-V's emphasis on continuous risk monitoring and iterative mitigation strategies.

### **3.2 Customer Success Management and End-User Adoption**

Customer success planning has evolved from a post-sales support function to a proactive lifecycle management strategy. Hill, McCullough, and Ricks (2020) and Gupta (2018) argue that aligning software features with customer pain points leads to significantly higher adoption rates and satisfaction scores. Gupta, Kumar, and Sharma (2020) emphasize the need for continuous feedback mechanisms to sustain long-term success. This view is supported by Tsai and Lin (2021), who examined customer success strategies in SaaS deployments and found that customized onboarding, training, and feedback loops are essential to driving long-term usage. End-user adoption planning, as a subcomponent of customer success, requires a change management lens. Kotter's (2019) model suggests that clear communication, empowerment, and quick wins are crucial for building momentum. The IRMC-V framework incorporates adoption metrics such as user engagement and training completion rates, echoing Tsai's (2021) and Jiju's (2018) recommendations for measuring functional adoption and improving customer satisfaction.

### **3.3 KPI Alignment with Business Value**

Measuring software project outcomes solely by budget or delivery time no longer suffices. Contemporary literature emphasizes value-driven KPIs such as customer satisfaction (CSAT), Net Promoter Score (NPS), and business efficiency gains (Antony, Snee, & Hoerl, 2021; Kumar, Scheer, & Steenkamp, 2019). These KPIs provide insight into whether the software project is aligned with strategic business objectives. Recent studies by Tsai, Hsieh, and Chen (2022) confirm the importance of integrating performance metrics with customer lifecycle stages to measure not only technical success but also customer value realization. The IRMC-V framework extends this by proposing a unified tracking dashboard that merges risk indicators, adoption progress, and business outcomes into one analytical view.

### 3.4 Integration and Strategic Alignment

The integration of risk, success, and KPI management is not only theoretical—it is being operationalized across industries. For example, Siemens Digital Industries Software has incorporated risk-based customer success plans to improve user adoption of Simulation Data Management tools, achieving both technical integration and behavioral engagement (Tribby & Elshennawy, 2023). This approach reinforces the IRMC-V framework’s underlying premise: alignment across risk, adoption, and value leads to more resilient and profitable project outcomes.

### 3.5 Literature Review Conclusion

The literature strongly supports a multidimensional approach to software project deployment that includes proactive risk management, customer success strategy, and KPI alignment. Tsai’s contributions, especially after 2019, provide empirical backing for the dynamic interplay between risk and customer behavior in digital solutions. The IRMC-V framework synthesizes these insights into a practical model, offering a comprehensive guide for maximizing software ROI in increasingly complex project environments.

## 4. Framework

The Integrated Risk Management, Customer Success Management, and Value-Driven KPIs (IRMC-V) framework is a structured approach to managing risks, ensuring customer success, and driving business value in software project deployment. This framework integrates risk management, customer success management, and value-driven key performance indicators (KPIs) to maximize the return on investment (ROI) of software projects.

### 4.1 Key Components:

**Risk Identification and Assessment:** Identify potential risks that could impact the software project, assess their likelihood and impact, and prioritize them for mitigation.

**Customer Success Planning:** Develop a customer success plan that aligns with the software project’s goals and objectives and identifies key customer needs and expectations.

**Value-Driven KPIs:** Establish KPIs that measure project value, customer satisfaction, and business outcomes, Figures 1a and 1b below are some example KPIs for both Adoption (tracking engagement and utilization and Performance (the measure of business value realization) with possible targets.

#### ◆ Adoption Metrics (Track Engagement & Implementation)

Metric	Description	Target
Software Utilization Rate	Percentage of eligible users actively using SDM within 6 months.	≥ 80% by Month 6 (as stated)
Training Completion Rate	% of engineering analysts and managers who completed onboarding.	≥ 90% within 90 days
Workflow Integration Coverage	% of legacy workflows successfully replicated or integrated in SDM.	≥ 75% by Q3 FY25
User Feedback Participation	Number of users participating in feedback or engagement sessions.	≥ 60% of user base per quarter
Champion Network Coverage	% of departments with at least one designated early adopter/champion.	100% representation

Figure 1a. Adoption KPIs with Target

◆ **Performance Metrics (Measure Business Value Realization)**

Metric	Description	Target	📄
Time-to-Access Simulation Configurations	Average time to locate and retrieve CFD configuration files.	Reduced by 50% vs. baseline	
Version Control Accuracy	% of projects with consistent version tracking and no duplication.	≥ 95% accuracy	
Engineering Time Allocation	% increase in analyst time spent on simulation vs. file handling.	≥ 20% increase by Q4 FY25	
Simulation Rework Rate	Decrease in simulation reruns due to mismanaged or outdated data.	≤ 5% of total runs	
Data Loss Incidents	Number of critical data loss/security events post-implementation.	Zero events reported	

Figure 1b. Performance KPIs with Target

1. Risk Mitigation and Management: Implement risk mitigation strategies to minimize the impact of identified risks and continuously monitor and manage risks throughout the project lifecycle.
2. Customer Success Management: Implement customer success management strategies to ensure that the software project meets customer needs and expectations and provides ongoing value to customers.
3. KPI Tracking and Analysis: Track and analyze KPIs to measure project value, identify areas for improvement, and make data-driven decisions.

## 4.2 Framework Phases

1. Project Initiation: Identify project goals, objectives, and stakeholders, and develop a preliminary risk management plan, customer success plan, and KPI framework.
2. Risk Assessment and Planning: Assess risks, develop a detailed risk management plan, and update the customer success plan and KPI framework.
3. Risk Mitigation and Management: Implement risk mitigation strategies, monitor and manage risks, and update the risk management plan as needed.
4. Customer Success Management: Implement customer success management strategies, monitor customer satisfaction, and update the customer success plan as needed.
5. KPI Tracking and Analysis: Track and analyze KPIs, identify areas for improvement, and make data-driven decisions.
6. Project Closure: Review project outcomes, evaluate the effectiveness of risk management, customer success management, and KPI framework, and identify lessons learned for future projects.

Below is a depiction of the IRMC-V Framework Flowchart, visually representing the integration of Risk Management, Customer Success Management, and Value-Driven KPIs in software project deployment.

Figure 2 below illustrates:

- Project Phases (linear flow)
- Key Components (risk management, customer success, KPI tracking)
- Dependencies (how each component feeds into the next)

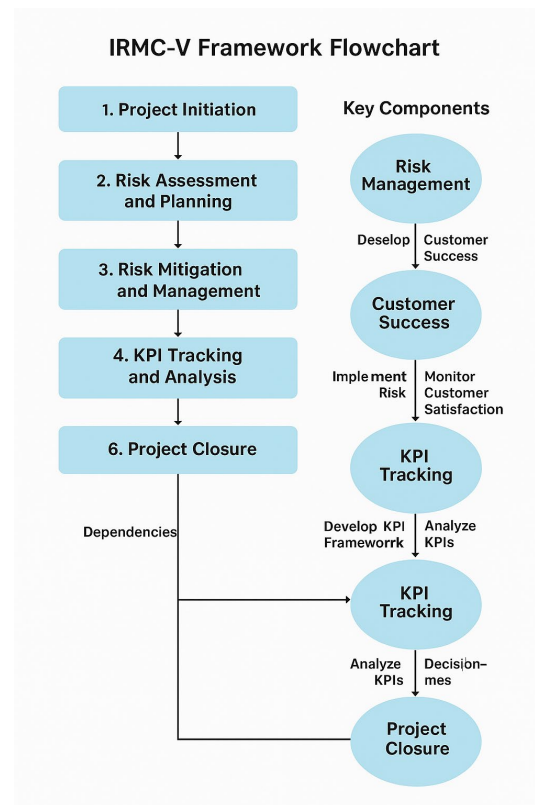


Figure 2. IRMC-V Framework Flowchart

## 5. Conclusions

### 5.1 Benefits of Using the IRMC-V Framework

The IRMC-V framework delivers measurable benefits across the software project lifecycle:

**Improved Risk Management** – Proactive identification and mitigation reduce project delays, cost overruns, and scope creep.

**Enhanced Customer Success** – Customer-centric strategies improve satisfaction, retention, and adoption rates.

**Increased ROI** – Integration of risk, success, and KPI strategies results in cost savings and stronger business outcomes.

**Data-Driven Decision Making** – Continuous KPI tracking supports informed, real-time decisions aligned with strategic objectives.

**Cross-Functional Alignment** – Embeds alignment between technical delivery, user experience, and enterprise value.

### 5.2 Uniqueness and Comparative Positioning

IRMC-V stands apart by unifying three traditionally siloed domains:

Risk Management typically operates independently from customer success planning.

Value-Driven KPIs are often applied post-deployment, rather than throughout the lifecycle.

Existing Frameworks such as PMBOK, ISO 31000, or Customer Success platforms (e.g., Gainsight, Totango) rarely offer an integrated, proactive methodology.

In contrast, IRMC-V embeds these elements holistically, aligning risk, customer value, and business metrics from initiation through closure.

### 5.3 Future Potential and Novel Contribution

The IRMC-V framework can be adapted to Agile, Waterfall, and hybrid methodologies and is applicable beyond software, extending to business transformation, digital platforms, and enterprise systems.

Future work should focus on:

Empirical validation through longitudinal case studies and adoption data.  
Customization for specific industries (e.g., SaaS, manufacturing, healthcare).  
Toolkits and templates to guide practical implementation.

## 5.4 Final Thoughts

In today's complex digital ecosystem, software project success requires more than technical precision—it demands strategic alignment, customer insight, and measurable value. The IRMC-V framework offers a cohesive and adaptable model for achieving these goals, positioning it as a meaningful contribution to both academic literature and industry practice.

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## Biography

**Dr. Dennis Tribby** is the Director of Technical Services at Siemens Digital Industries Software, bringing over 30 years of experience in engineering services and program management. His expertise spans aerospace and defense, with a particular focus on product lifecycle management, cost engineering, and supplier parts management. Dr. Tribby earned his Ph.D. in Industrial Engineering and Management Systems from the University of Central Florida under the mentorship of Dr. Ahmad Elshennawy. His doctoral research explored the impact of cost engineering practices on project success within Six Sigma frameworks. He also holds a Master's degree in Mechanical Engineering, an MBA,

and a B.S. in Applied Mathematics from the University of Cincinnati. He is a certified Six Sigma Black Belt and a Certified Quality Engineer. Over the course of his career, Dr. Tribby has led strategic software deployment initiatives, including managing the implementation of enterprise solutions at Lockheed Martin for the Joint Strike Fighter (JSF) program. He also directed operations for Siemens' Industrial Machinery and Energy Services division, where he contributed to improving digital transformation strategies and engineering efficiency. Dr. Tribby's interdisciplinary expertise merges academic insight with practical execution. His work advances the role of cost engineering in driving measurable outcomes in complex engineering environments. A recognized thought leader, he continues to influence industry best practices in engineering program management, quality assurance, and operational excellence.