JOURNAL OF APPLIED INTELLIGENT SYSTEMS & INFORMATION SCIENCES

VOL. 4, ISSUE 2, PP. 15-21, NOVEMBER 2023.
Available at: https://journal.research.fanap.com/
DOI: https://doi.org/10.22034/JAISIS.2023.417633.1069

ENHANCING STAKEHOLDER COMMUNICATION IN BANKING SOFTWARE PROJECTS: LESSONS LEARNED FROM CRISIS MANAGEMENT

Alireza Namazi [1,*]

[1] *Department of Industrial Engineering, Tarbiat Modares University, Tehran, Iran.*

ABSTRACT

The banking industry has profoundly transformed in an era marked by rapid technological advancements and evolving customer expectations. To remain competitive, financial institutions must embark on modern banking software projects. However, the success of such initiatives is intrinsically tied to effective stakeholder communication. The paper begins by illuminating the adverse consequences of the initial crisis, magnifying the elements that triggered this predicament. A corrective scenario is meticulously outlined, designed to rectify past errors and prevent future recurrence of such difficulties. This research strives to arm decision-makers with the tools to anticipate risks and take proactive measures to avert disaster. This paper underscores the importance of transparent communication, diligent crisis prevention, and continuous improvement in modern banking software projects. By identifying crisis-causing factors and implementing corrective measures, stakeholders can steer these projects toward success, fostering satisfaction among all involved parties. Ultimately, this structured analysis is an invaluable resource for professionals and organizations in software development and banking, guiding them toward enhanced stakeholder communication and adept crisis management.

KEYWORDS: Stakeholder Communication, Crisis Prevention, Crisis Management, Software Project, Risk Mitigation

1. INTRODUCTION

The banking industry has witnessed a rapid transformation driven by technological advancements and evolving customer expectations in recent years. As financial institutions strive to stay competitive in this dynamic landscape, implementing modern banking projects has become crucial. However, one critical factor that often hinders the success of such initiatives is the lack of clear communication among relevant stakeholders. This deficiency in establishing a suitable mental background about the goals and details of these projects can lead to unforeseen consequences and even crises.

The importance of effective communication cannot be overstated when it comes to implementing modern banking projects. Clear and concise communication ensures all stakeholders, including management,

* *Corresponding Author, Email: namazi110@gmail.com*

RECEIVED: 23 SEPTEMBER 2023; **ACCEPTED**: 19 NOVEMBER 2023; **PUBLISHED ONLINE**: 28 NOVEMBER 2023

employees, customers, and regulators, understand the project's objectives and intricacies. Without this foundation, misunderstandings can arise, leading to misaligned expectations and potential project failures. Furthermore, neglecting to consider various aspects that have historically led to crises within the banking industry can exacerbate these challenges. Lessons from past financial crises should serve as valuable references for decision-makers in modern banking projects. By analyzing these historical events and identifying their root causes, stakeholders can better anticipate potential risks and take proactive measures to mitigate them. These stakeholders can be from different groups (Fig. 1).

This scientific paper explores the detrimental consequences of the lack of clear communication among relevant stakeholders during the establishment of modern banking projects. Additionally, it will shed light on how neglecting to consider various aspects that have led to crises in the past can further exacerbate these challenges. This research provides insights into best practices for effective stakeholder communication and risk management within modern banking initiatives by examining case studies and empirical evidence from previous banking projects. Ultimately, understanding the significance of clear communication and comprehensive risk assessment is vital for ensuring the successful implementation of modern banking projects. Financial institutions can enhance their project outcomes by addressing these issues head-on through improved stakeholder engagement strategies and thoroughly examining historical lessons learned while minimizing potential crises or unexpected consequences.

Notably, this work is borrowed from a real case study in Dotin Co. a large-scale enterprise in providing financial software solutions. The case study concerns the practical crisis management-based case study during conducting a core-banking migration project. In the rest of the paper, Section 2 reviews the literature while Section 3 devises crisis in communication with stakeholders. Finally, Section 4 is considered for providing a conclusion.

Fig. 1: Types of stakeholders (ActiveCampaign, 2023)

2. RELATED WORK

Effective communication is paramount in software projects, especially in the banking industry where high stakes and potential crises loom. Precise and efficient communication with stakeholders ensures project success and mitigating negative consequences. The significance of effective communication and crisis prevention strategies cannot be overemphasized in software projects within the banking sector. Previous studies have emphasized the importance of establishing clear lines of communication with stakeholders and utilizing exercises to identify factors that may lead to crises. By implementing corrective scenarios and drawing from past experiences, organizations can improve project outcomes and minimize adverse effects on employees, managers, and stakeholders.

In terms of communication in software projects, numerous studies have emphasized the significance of effective communication in software projects. Butt et al. (2016) stated that poor communication can lead to project failure, delays, and increased costs. They highlight the need for regular and transparent communication channels between project teams and stakeholders to ensure a shared understanding of objectives, requirements, and progress. Furthermore, research by Beasley (2005) emphasizes the importance of stakeholder engagement and clear communication in managing project complexities.

Additionally, crisis prevention strategies have been extensively studied in software project management literature. One approach is to conduct exercises or simulations to identify potential crisis-causing factors before they escalate into major issues. These exercises aim to improve coordination among project factors and enhance understanding of project objectives. Numerous scholars highlight the need for crisis prevention measures in project management (Lewa et al., 2022) and discuss the significance of proactively identifying and addressing potential crises in project management.

Meanwhile, the lack of clear communication among relevant parties has been identified as a common factor contributing to software project crises (Hasim et al. 2013). This aligns with the problem encountered by Dotin Co. in establishing communication with stakeholders for the banking software project. Neglecting various aspects, such as providing a suitable mental background about exercise objectives and details, further exacerbates the crisis risk.

To address these challenges, researchers have proposed corrective scenarios focusing on alternative solutions, dividing scenario programs into smaller executable parts at different times, and creating coordination among project factors (Berander et al. 2015). These measures aim to improve understanding among stakeholders about exercise objectives and minimize complexity within the system.

Moreover, as proposed by Peraza-Baeza et al. (2016), Agile methodologies emphasize adaptability, collaboration, and iterative development. These principles align with our corrective scenario, which focuses on considering alternative solutions and creating coordination. Another key facet is about learning from past crises which is crucial for preventing future occurrences. Organizations can enhance their crisis prevention strategies by identifying crisis-causing factors and implementing corrective measures. In the case of Dotin Co., after learning from the initial crisis, subsequent exercises were conducted according to corrective scenarios, resulting in improved stakeholder satisfaction and successful system operation. Research by Tamuz et al. (1991) discusses the importance of post-crisis analysis and the role of organizational learning in preventing future crises.

Stakeholder Engagement in Banking Software has been also dealt with by previous studies (Quilon & Perreras, 2020). In this regard, stakeholder communication strategies in banking IT projects have been explored. Their findings highlight the positive impact of effective stakeholder engagement on project success, aligning with our emphasis on coordination and understanding among project factors.

Finally, coordination in complex projects is the key concern among the involved parties. Managing complexity in projects is exacerbated when facing multiple stakeholders. A study by Chapetta and Travassos (2020) delves into the complexities of coordination and collaboration in large-scale projects.

3. Crisis in Communicating with Stakeholders

Here we are going to review the crisis in communicating with stakeholders (Fig. 2):

3.1. Crisis

The crisis typically arises when communication breaks down between the software company developing the banking software and its stakeholders, including the bank's management, regulatory bodies, and end-users. This crisis can manifest in several ways:

- Lack of Transparency and Communication: Failure to provide regular and clear updates on project progress, challenges, and changes in scope can result in stakeholders feeling uninformed and disconnected from the project's development.
- Software Bugs and Security Issues: Frequent software bugs or vulnerabilities can erode user trust. These issues can have severe consequences in banking, including financial losses and data breaches.
- Missed Deadlines and Scope Creep: When a project consistently misses deadlines or experiences scope creep (i.e., the project's requirements keep expanding without clear communication or agreement), it can lead to frustration and mistrust among stakeholders.
- Negative Effects for the Software Company and Stakeholders: The consequences of this crisis can be significant:
- Loss of Stakeholder Confidence: Mistrust can lead to a loss of confidence in the software company's ability to deliver a reliable and secure banking software solution. This can affect long-term partnerships and future projects.
- Customer Attrition: Users who lose trust in the banking software may switch to competitors, leading to customer attrition and revenue loss for the bank.
- Reputation Damage: The software company's reputation can be tarnished, affecting its ability to secure new clients and projects in the banking sector.

3.2. Crisis Effects

A crisis and communication problem with stakeholders, along with user distrust, in the context of a banking software project refers to a situation where significant issues arise in establishing effective communication with key project stakeholders, such as the bank management, regulatory authorities, and end-users. A lack of trust from the software users often accompanies this. To mitigate these comprehensive negative effects, the software company must prioritize effective communication, understand, and align with stakeholder expectations, and promptly address any issues that arise during the project's lifecycle.

Establishing and maintaining a robust, transparent, and collaborative relationship with stakeholders is essential for the success of the banking software project and the overall reputation of the software company (De Souza Santos & Ralph, 2022; Gong et al., 2022; Iqbal et al., 2023; Lee et al., 2006). The comprehensive negative effects of such a scenario on the software company and the stakeholders of the banking software project include:

- Project Delays: Communication breakdowns and distrust can lead to project delays, impacting the software company's ability to meet deadlines and potentially resulting in increased project costs.
- Customer Dissatisfaction: User distrust and communication problems can result in dissatisfied end-users. Unhappy customers may choose to switch to competing software solutions, causing a loss of customer base and reduced revenue for the software company.
- Reputation Damage: A crisis in communication and a lack of trust can severely damage the software company's reputation. This tarnished image may affect the company's ability to secure future projects and partnerships.
- Increased Costs: Addressing communication issues and rebuilding trust with stakeholders may require additional resources and expenses, potentially exceeding the project's budget.
- Missed Business Opportunities: The crisis and user distrust may lead to missed business opportunities within the banking software sector. Competing software companies could exploit these issues to gain an advantage, potentially harming the affected software company's market position.
- Legal Consequences: In severe cases, the crisis may escalate into legal disputes, leading to further costs and potentially damaging the reputation of the software company and the stakeholders involved.
- Operational Disruption: The ongoing communication crisis and distrust can disrupt the normal operations of the banking institution, leading to inefficiencies and potential financial losses.

- Regulatory Scrutiny: Regulatory authorities may scrutinize the project more closely, leading to potential fines or penalties if non-compliance or operational deficiencies are discovered.
- Employee Morale: Prolonged crises and communication problems can negatively impact the morale of the software company's employees working on the project, potentially affecting their productivity and job satisfaction.

3.3. Preventing the Crisis

To prevent the crisis and problems associated with communicating with stakeholders and user mistrust in a banking software project, consider the following strategies (Butt et al., 2016; Kitzmiller et al., 2006):

- Clear Communication: Establish a robust communication plan with regular updates to all stakeholders. Ensure that project progress, challenges, and scope changes are communicated transparently.
- Transparency: Be transparent about issues and setbacks. Avoid hiding problems until they escalate, as this can erode trust further.
- Agile Project Management: Adopt agile project management methodologies that allow for flexibility and adaptability in response to changing stakeholder needs. This can help prevent scope creep and missed deadlines.
- Quality Assurance and Testing: Implement rigorous quality assurance and testing processes to catch and fix software bugs and security vulnerabilities early in development. This demonstrates a commitment to delivering a reliable product.

3.4. Solving the Crisis

If a crisis in communication and user mistrust has already developed in a banking software project, the following steps can help resolve the situation (Jahansoozi, 2006; Rodríguez et al., 2019; Vallaster, 2017):

- Engage Stakeholders: Reach out to stakeholders and listen to their concerns. Address their questions and provide evidence of the steps to improve the project's status. Establish a more open line of communication.
- Rebuild Trust Incrementally: Rebuilding trust takes time. Demonstrate consistent progress, transparent communication, and a commitment to resolving issues. Show stakeholders that lessons have been learned from past mistakes.
- Deliver on Promises: Ensure that future commitments are met, and deadlines are honored. Consistency in delivering on promises can gradually restore trust.
- Continuous Improvement: Use the crisis as an opportunity for self-reflection and process improvement. Learn from past mistakes and continuously enhance project management and software development practices.

Fig. 1: Crisis in communicating with stakeholders

4. CONCLUSION

The banking industry has undergone a remarkable transformation due to rapid technological advancements and evolving customer expectations. To navigate this dynamic landscape successfully, implementing modern banking projects has become imperative for financial institutions. However, a critical barrier to the success of these endeavors often lies in inadequate communication among key stakeholders. This deficiency in establishing a shared understanding of project goals and details can lead to unforeseen consequences and crises. The significance of effective communication cannot be overstated in the context of modern banking projects. It is the cornerstone for ensuring that all stakeholders, including management, employees, customers, and regulators, grasp the project's objectives and complexities. Without this foundation, misunderstandings can arise, potentially resulting in project failures.

Moreover, failing to consider historical factors that have led to crises within the banking industry can exacerbate these challenges. Lessons from past financial crises should be invaluable references for decision-makers in modern banking projects. This scientific paper has explored the detrimental consequences of inadequate communication among relevant stakeholders during the establishment of modern banking projects. It has also illuminated how overlooking historical crisis-inducing factors can compound these challenges. This research has provided insights into best practices for effective stakeholder communication and risk management within modern banking initiatives by examining case studies and empirical evidence from previous banking projects.

Ultimately, recognizing the importance of clear communication and comprehensive risk assessment is essential for ensuring the successful implementation of modern banking projects. Financial institutions can enhance project outcomes by proactively addressing these issues through improved stakeholder engagement strategies and thoroughly examining historical lessons learned, thereby minimizing potential crises and unexpected consequences. The effective implementation of these strategies will benefit the projects themselves and contribute to the long-term reputation and success of financial institutions and software companies in the banking sector.

REFERENCES

Available at L. (2023, March 30). The 10 Types of Stakeholders That You Meet in Business. ActiveCampaign. https://www.activecampaign.com/blog/types-of-stakeholders

Beasley, C. (2005). Review of "Balancing Agility and Discipline: A Guide for the Perplexed by Barry Boehm and Richard Turner"; Addison Wesley, 2004, ISBN 0-321-18612-5. *ACM SIGSOFT Software Engineering Notes*, *30*(2). https://doi.org/10.1145/1050849.1050867

Berander, P., Damm, L. O., Eriksson, J., Gorschek, T., Henningsson, K., Jönsson, P., ... & Wohlin, C. (2005). Software quality attributes and trade-offs. *Blekinge Institute of Technology*, *97*(98), 19.

Butt, A., Naaranoja, M., & Savolainen, J. (2016). Project change stakeholder communication. *International Journal of Project Management*, *34*(8). https://doi.org/10.1016/j.ijproman.2016.08.010

Chapetta, W. A., & Travassos, G. H. (2020). Towards an evidence-based theoretical framework on factors influencing the software development productivity. *Empirical Software Engineering*, *25*(5). https://doi.org/10.1007/s10664-020-09844-5

De Souza Santos, R. E., & Ralph, P. (2022). A Grounded Theory of Coordination in Remote-First and Hybrid Software Teams. *Proceedings - International Conference on Software Engineering*, *2022-May*. https://doi.org/10.1145/3510003.3510105

Gong, Y., Zhang, Y., & Alharithi, M. (2022). Supply Chain Finance and Blockchain in Operations Management: A Literature Review. *Sustainability (Switzerland)*, *14*(20). https://doi.org/10.3390/su142013450

Hashim, R., Abbas, M., & Hashim, M. (2013, October). Critical success factors assessment in software projects. In *2013 Science and Information Conference* (pp. 282-287). IEEE.

Iqbal, K., Shafiq, M. A., Singh, S., & Afzal, M. K. (2023). Impact of Opioid Use Disorder (OUD) on Employee Productivity: An Empirical Investigation. *International Journal of Business Intelligence and Big Data Analytics*, *6*(1).

Jahansoozi, J. (2006). Organization-stakeholder relationships: Exploring trust and transparency. *Journal of Management Development*, *25*(10). https://doi.org/10.1108/02621710610708577

Kitzmiller, R., Hunt, E., & Sproat, S. B. (2006). Adopting best practices: "Agility" moves from software development to healthcare project management. In *CIN - Computers Informatics Nursing* (Vol. 24, Issue 2). https://doi.org/10.1097/00024665-200603000-00005

Lee, S. H., Peña-Mora, F., & Park, M. (2006). Dynamic planning and control methodology for strategic and operational construction project management. *Automation in Construction*, *15*(1). https://doi.org/10.1016/j.autcon.2005.02.008

Lewa, P. M., Muna, J., & Muna, F. M. (2022). *Leading Strategic Change in Organizations Today*. https://doi.org/10.1007/978-3-030-95652-3_15

Peraza-Baeza, I., Perez-Hernandez, A., Blanco-Cocom, L., Domínguez-Maldonado, J., & Alzate-Gaviria, L. (2016). Manifesto for Agile Software Development. *Revista Mexicana de Ingeniera Quimica*, *15*(3).

Quilon, A., & Perreras, R. (2020). Communication Climate as Predictor of Perceived Corporate Governance and Organizational Success. *Bedan Research Journal*, *5*(1). https://doi.org/10.58870/berj.v5i1.17

Rodríguez, P., Mäntylä, M., Oivo, M., Lwakatare, L. E., Seppänen, P., & Kuvaja, P. (2019). Advances in Using Agile and Lean Processes for Software Development. In *Advances in Computers* (Vol. 113). https://doi.org/10.1016/bs.adcom.2018.03.014

Tamuz, M., Rosenthal, U., Charles, M. T., & Hart, P. 't. (1991). Coping with Crises: The Management of Disasters, Riots and Terrorism. *Administrative Science Quarterly*, *36*(3). https://doi.org/10.2307/2393212

Vallaster, C. (2017). Managing a Company Crisis through Strategic Corporate Social Responsibility: A Practice-Based Analysis. *Corporate Social Responsibility and Environmental Management*, *24*(6). https://doi.org/10.1002/csr.1424