
Digital Transformation Readiness Level of Royal Thai Air Force

Varit Intrama

Thailand Center of Excellence for Life Sciences (Public Organization), Bangkok, Thailand

ABSTRACT

This research aims to develop a comprehensive toolkit to assess the readiness of the Royal Thai Air Force (RTAF) for organizational change as it transitions into the digital era, based on the framework provided by the United Nations Development Programme (UNDP). The primary objective of this study is to design a robust toolkit to evaluate the RTAF's preparedness for digital transformation. This toolkit is an adaptation of the UNDP's framework, tailored to address the specific context and requirements of the RTAF. To ensure the content validity of the toolkit, an expert evaluation was conducted involving three specialists. The reliability of the toolkit was confirmed with a Cronbach's alpha coefficient of 0.82. The study employed a quantitative approach to determine the overall readiness level of the RTAF for organizational change, which averaged 70.49%. The assessment covered various domains, with the following readiness levels: Innovation Ecosystem (46.67%), Basic Digital Utilities (Technological Infrastructure) (63.53%), Basic Data Utilities and Data Infrastructure, Strategy, and Management (66.67%), Cyber Security, Privacy, and Resilience (70.22%), Legal Basis (73.33%), Organizational Culture and Employee Skills (76.67%), Public Administration Reform (77.50%), Management (77.62%), and User-Oriented Design (82.22%). The findings reveal that the overall readiness level has not yet met the 80% standard threshold. The relatively low score in the Innovation Ecosystem domain indicates it may not be a core mission of the RTAF. Additionally, budget constraints likely contribute to the readiness level of basic digital infrastructure falling below 70%. Nevertheless, readiness levels in other areas range from 70.00% to 80.00%, suggesting a positive trend towards achieving higher readiness in the future. Despite existing challenges, the RTAF demonstrates a promising trajectory towards enhanced digital readiness, particularly in organizational culture, employee skills, public administration reform, and user-oriented design. Strategic investments and focused efforts in weaker areas such as the Innovation Ecosystem and basic digital infrastructure will be crucial for achieving comprehensive readiness for digital transformation. This study underscores the importance of a tailored approach to evaluating organizational readiness for digital transformation. The RTAF's strengths in several key domains provide a solid foundation for future improvements. Addressing the identified weaknesses through targeted investments and strategic initiatives will be essential for the RTAF to fully embrace the digital era.

Keywords: Digital transformation, Digital transformation readiness level, Royal Thai Air Force

INTRODUCTION

The Thailand's government policy presented to the parliament on September 11, 2023, emphasizes the full implementation of technology and digital systems for the benefit of the country and its people. This policy aims to provide digital knowledge and skills to the public, enabling Thailand to advance rapidly and keep pace with global developments in all aspects. Concurrently, the policy of Mr. Suthin Klangsaeng, the Minister of Defense, specifically item 1.2.4, aims to modernize and streamline the administration of the Ministry of Defense to be efficient and aligned with the social and security context. Additionally, the vision of Air Chief Marshal Panpakdee Phatnakul, the Commander-in-Chief of the Air Force, seeks to make the Royal Thai Air Force a strong and efficient force using eight policy areas as driving tools. It is evident that digital systems are crucial tools for the government to achieve its goals through the operations of the Air Force. The Air Force must establish practical ways to effectively implement digital systems. However, the immediate application of digital systems for the administration of the Air Force as per the policy may not be as effective as expected. Implementing digital systems in a large organization like the Air Force requires clear policies, appropriate resource allocation, and administrative practices suitable for the organization's missions. Therefore, it is necessary to assess readiness to accommodate upcoming changes. This research is the first of its kind within the Ministry of Defense to use international standard tools and assessment methods to evaluate the level of readiness for digital transformation. The objective of this study is to design a robust toolkit to evaluate the RTAF's preparedness for digital transformation. The toolkit is an adaptation of the UNDP's framework, tailored to address the specific context and requirements of the RTAF.

CONCEPTS, THEORIES, AND RELATED LITERATURE

Strategic Concept

Current strategic concepts can be divided into two types based on the organization: public sector strategy and private sector strategy. Although they are similar, they cannot be used interchangeably. The public sector strategy relevant to security agencies, analyzed by Colonel Lykke (Lykke, 1997) and Bartlett (Bartlett, Holman, and Somes, 2004), was selected for this research due to its detailed approach.

Colonel Lykke's concept defines strategy as the integration of three components: objectives (Ends), methods or courses of action (Ways), and resources (Means). To achieve the set goals, all three components must align.

Given the government's and the Air Force's goals of maintaining and enhancing organizational capabilities and modernization, the government has set policies to digitize public sector organizations. Achieving these goals requires appropriate methods and effective tools for assessing readiness for digital transformation. Therefore, this research seeks to find suitable methods and tools for the Air Force to effectively manage digital systems.

Digital Transformation Readiness Assessment

Assessing readiness for digital transformation involves understanding the current state of the organization. The researcher selected the United Nations Development Programme's (UNDP) toolkit for planning digital transformation in the public sector, supported by the UK government. The toolkit consists of nine parts: management, user-oriented design, public administration reform, organizational culture and employee skills, technological infrastructure, data infrastructure strategy and management, cyber security, privacy, and resilience, legal basis, and innovation ecosystem.

Digital Transformation Concept

Digital transformation involves significant changes in organizational management driven by digital technology integration. It includes converting analog data (OECD, 2019) and processes to digital formats, using technology and data integration to create new activities and improve existing ones. It enhances service efficiency for stakeholders (Reynolds, 2019) and integrates advanced technology and processes to develop smart products and services.

Digital Government Concept

Digital government involves using digital technology to enhance public administration efficiency and provide innovative public services. It emphasizes data-centric development to support government operations and improve public services. In Thailand, digital government aims to integrate and secure public sector information management to improve efficiency and transparency in public services.

Development of the Digital Transformation Readiness Assessment Toolkit

The development process includes two sub-parts:

1. Content Development: Adapting the UNDP toolkit for the Air Force context and translating it into Thai.
2. Testing the Toolkit: Conducting content validity tests with three experts and reliability tests using Cronbach's alpha coefficient.

RESEARCH RESULTS

Respondents

The respondents of this research were the commanding officers from the head of department level upwards from 16 command units of the Royal Thai Air Force. These units include: Office of the Secretary of the Air Force, Directorate of Air Force Administration, Directorate of Personnel, Directorate of Intelligence, Directorate of Operations, Directorate of Logistics, Directorate of Civil Affairs, Directorate of Information Technology and Communication, Office of the Comptroller General, Directorate of Finance, Inspector General Department, Office of Internal Audit, Air Force

Aviation Office, Air Force Safety Office, Air Force Legal Office, Air Force Cyber Center.

Assessment Results

The analysis of the survey responses covered various domains related to digital transformation readiness. The results are presented as percentages indicating the level of readiness in each domain:

1. Innovation Ecosystem: 46.67%, This domain scored the lowest, indicating that fostering an innovation ecosystem is not currently a core focus of the RTAF.
2. Technological Infrastructure: 63.53%, The readiness level in this domain reflects the existing digital utilities and technological infrastructure within the RTAF.
3. Data Infrastructure Strategy and Management: 66.67%, This domain assesses the readiness regarding data management, strategy, and infrastructure.
4. Cyber Security, Privacy, and Resilience: 70.22%, The readiness level in this domain reflects the current measures and systems in place for cyber security and data privacy.
5. Legal Basis: 73.33%, This domain assesses the readiness level concerning the legal frameworks and regulations supporting digital transformation.
6. Organizational Culture and Employee Skills: 76.67%, The readiness level in this domain indicates the cultural and skill readiness of the RTAF's personnel to embrace digital transformation.
7. Public Administration Reform: 77.50%, This domain reflects the readiness level regarding the reforms in public administration to support digital transformation.
8. Management: 77.62%, The readiness level in this domain indicates the management's preparedness and strategic alignment for digital transformation.
9. User-Oriented Design: 82.22%, This domain scored the highest, indicating a strong focus on user-oriented design and service delivery.

Overall Readiness

The overall readiness level of the Royal Thai Air Force for digital transformation is 70.49%, which is below the standard threshold of 80%. The results indicate areas that require further attention and investment, particularly in fostering an innovation ecosystem and enhancing the technological infrastructure. However, the RTAF shows promising readiness in domains such as organizational culture, public administration reform, and user-oriented design.

ANALYSIS AND INTERPRETATION

The relatively low score in the Innovation Ecosystem domain suggests that this may not be a primary mission of the RTAF. Additionally, budget constraints likely contribute to the lower readiness level in technological

infrastructure. Despite these challenges, the RTAF demonstrates a positive trajectory towards enhanced digital readiness. The strengths in several key domains provide a solid foundation for future improvements.

STRATEGIC RECOMMENDATIONS

To achieve comprehensive readiness for digital transformation, the RTAF should focus on:

- **Investing in Innovation Ecosystems:** Encourage innovation through partnerships with academic institutions and private sectors.
- **Enhancing Technological Infrastructure:** Allocate budget and resources to upgrade digital utilities and infrastructure.
- **Strengthening Cyber Security Measures:** Implement advanced cyber security solutions and conduct regular resilience testing.
- **Promoting Digital Culture:** Continue to develop digital skills and foster a culture of collaboration and innovation among

CONCLUSION AND RECOMMENDATIONS

Conclusion

The research on the readiness level for digital transformation within the Royal Thai Air Force (RTAF) has provided valuable insights into the current state of organizational preparedness. The overall readiness level stands at 70.49%, which, although promising, falls short of the 80% threshold that indicates robust readiness. The detailed analysis across various domains reveals both strengths and areas needing improvement.

Key Findings:

- The Innovation Ecosystem scored the lowest at 46.67%, suggesting limited focus and investment in fostering innovation within the organization.
- Technological Infrastructure readiness is at 63.53%, indicating adequate but not optimal digital utilities and technological systems.
- Data Infrastructure Strategy and Management readiness is 66.67%, reflecting moderate preparedness in managing and strategizing data.
- Cyber Security, Privacy, and Resilience scored 70.22%, showing that while basic measures are in place, there is room for enhancing cyber security frameworks.
- The Legal Basis domain is at 73.33%, indicating a relatively strong alignment with legal and regulatory requirements.
- Organizational Culture and Employee Skills scored 76.67%, highlighting a positive trend towards embracing digital transformation among personnel.
- Public Administration Reform and Management domains scored 77.50% and 77.62% respectively, reflecting strong management support and ongoing administrative reforms.

- The highest score of 82.22% in the User-Oriented Design domain signifies a strong commitment to user-centric service delivery.

Despite the challenges, the RTAF exhibits a promising trajectory towards enhanced digital readiness, particularly in organizational culture, employee skills, public administration reform, and user-oriented design.

Recommendations

To achieve comprehensive readiness for digital transformation, the following strategic recommendations are proposed:

1. Invest in Innovation Ecosystems:
 - Develop partnerships with academic institutions and private sectors to foster innovation.
 - Create innovation hubs and incubators within the RTAF to encourage new ideas and technological advancements.
 - Allocate specific budgetary provisions for research and development initiatives focused on innovation.
2. Enhance Technological Infrastructure:
 - Prioritize the upgrade and modernization of digital utilities and infrastructure.
 - Implement advanced technological solutions, such as cloud computing, AI, and IoT, to streamline operations.
 - Ensure robust data backup and recovery systems to maintain operational continuity.
3. Strengthen Cyber Security Measures:
 - Implement advanced cyber security solutions, including firewalls, anti-virus software, and intrusion detection systems.
 - Conduct regular training and awareness programs for personnel on cyber security best practices.
 - Establish a dedicated cyber security task force to monitor and respond to threats in real-time.
4. Promote Digital Culture:
 - Foster a culture of collaboration and continuous learning among personnel to embrace digital transformation.
 - Provide ongoing training and development programs to enhance digital skills across all levels of the organization.
 - Encourage cross-functional teams to work on digital projects, promoting knowledge sharing and innovation.
5. Align Legal Frameworks:
 - Review and update legal and regulatory frameworks to support digital initiatives.
 - Ensure compliance with data protection and privacy laws to build trust among stakeholders.
 - Collaborate with legal experts to address any potential legal barriers to digital transformation.
6. Improve Data Management Strategies:
 - Develop comprehensive data management policies and protocols to ensure data integrity and security.

- Utilize big data analytics and predictive modelling to enhance decision-making processes.
- Promote data sharing and interoperability across different departments to improve efficiency and collaboration.

Action Plan for Implementation

To effectively implement the above recommendations, the following action plan is proposed:

1. Establish a Digital Transformation Task Force:
 - Form a dedicated team responsible for overseeing the digital transformation initiatives within the RTAF.
 - Assign clear roles and responsibilities to ensure accountability and efficient execution of strategies.
2. Develop a Detailed Roadmap:
 - Create a comprehensive roadmap outlining the key milestones, timelines, and resources required for each strategic initiative.
 - Regularly review and update the roadmap to ensure alignment with organizational goals and priorities.
3. Secure Funding and Resources:
 - Identify and secure funding sources, both internal and external, to support digital transformation projects.
 - Allocate necessary resources, including personnel, technology, and infrastructure, to achieve the desired outcomes.
4. Monitor and Evaluate Progress:
 - Implement a robust monitoring and evaluation framework to track the progress of digital transformation initiatives.
 - Conduct regular assessments and audits to ensure compliance with established standards and best practices.
 - Adjust strategies and action plans based on feedback and evaluation results to continuously improve performance.
5. Engage Stakeholders:
 - Foster active engagement and collaboration with all stakeholders, including personnel, partners, and end-users.
 - Communicate the vision, goals, and benefits of digital transformation initiatives to build support and buy-in across the organization.

By following this action plan and addressing the identified areas for improvement, the Royal Thai Air Force can enhance its readiness for digital transformation and effectively navigate the challenges of the digital era. The strategic investments and focused efforts will ensure that the RTAF remains a strong and efficient force, fully capable of leveraging digital technologies to achieve its mission and objectives.

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