Analysis of Information Technology and Business Strategy Alignment in the Government Agency Personnel Management System Using the Luftman Model

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Abstract

The alignment between information technology (IT) and business strategy is a critical factor influencing organizational performance, particularly within government institutions that rely on digital systems for human resource management. This study aims to analyze the level of alignment between IT and business strategies in the Government Agency Personnel Management System using the Luftman Strategic Alignment Maturity Model (SAMM). Data were collected through questionnaires and interviews with key stakeholders, including IT managers, HR officers, and policy makers. The assessment dimensions included communication, competency/value measurement, governance, partnership, technology scope, and skills. The results indicate a moderate level of alignment (maturity level 3), suggesting that while IT supports operational efficiency, strategic collaboration and measurement mechanisms remain limited. Recommendations are provided to enhance the integration of IT and business strategies to achieve optimal alignment in supporting human resource digitalization initiatives.

***Keywords**:* IT-Business Alignment, Luftman Model, Personnel Management System, Government Agency, Strategic Alignment.

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Introduction

In the digital transformation era, information technology (IT) has become a critical enabler for improving operational efficiency, service quality, and decision-making within organizations. In government institutions, the integration of IT plays a vital role in supporting administrative processes and achieving transparency, accountability, and responsiveness in public service delivery. One of the core systems supporting human resource operations in government agencies is the *Personnel Management System*, commonly known as *Sistem Informasi Manajemen Kepegawaian (SIMPEG)* in Indonesia. This system facilitates the management of employee data, career development, performance evaluation, and administrative functions, thereby contributing to the optimization of human resource governance.

However, despite the significant investments in IT infrastructure and systems, many public organizations still face challenges in aligning IT strategies with institutional business objectives. Misalignment between IT and business strategies often leads to inefficiencies, duplication of efforts, and suboptimal use of technological resources [1]. Strategic alignment, therefore, becomes essential to ensure that IT initiatives not only support but also drive the realization of organizational goals.

The concept of IT-business strategic alignment has been extensively studied in both private and public sectors. Henderson and Venkatraman [2] introduced the Strategic Alignment Model (SAM), which emphasizes the need for consistency between business strategy, IT strategy, organizational infrastructure, and IT infrastructure. Building upon this foundation, Luftman [3] developed the Strategic Alignment Maturity Model (SAMM), which provides a practical framework for assessing and improving the maturity level of IT-business alignment within organizations. The model evaluates alignment through six dimensions: communication, competency/value measurement, governance, partnership, technology scope, and skills.

Applying Luftman's model within a government agency context provides a comprehensive means of understanding how IT supports the organization's strategic goals and how collaboration between IT and business units can be enhanced. This study aims to assess the level of alignment between IT and business strategies in the Government Agency Personnel Management System using the Luftman SAMM framework. The results of this research are expected to provide valuable insights for improving IT governance, optimizing resource utilization, and strengthening digital transformation initiatives in public sector human resource management.

Literature Review

2.1 Information Technology and Business Strategy Alignment

The alignment between information technology (IT) and business strategy has long been recognized as a critical determinant of organizational success. Henderson and Venkatraman [2] introduced the Strategic Alignment Model (SAM), which highlights the dynamic interrelationship between business strategy, IT strategy, organizational infrastructure, and IT infrastructure. According to their model, organizations must ensure that IT capabilities are aligned with business goals to achieve competitive advantage and operational efficiency. Misalignment between these two domains can lead to inefficiencies, redundancy, and failure to meet organizational objectives [1].

In the public sector, IT-business alignment is equally essential but often more complex due to bureaucratic structures, limited resources, and evolving policy environments [4]. Unlike private organizations that focus on profit and competition, government institutions prioritize service delivery, transparency, and accountability. Therefore, aligning IT initiatives with

strategic objectives requires integrating technological innovation with governance frameworks and public policy goals [5].

2.2 Strategic Alignment in Public Sector Organizations

Governments around the world have implemented digital transformation programs to improve efficiency and citizen engagement. However, several studies indicate that achieving strategic alignment in public institutions remains challenging due to structural and cultural barriers [6]. A lack of collaboration between IT and non-IT departments, unclear governance models, and limited digital competencies among civil servants hinder effective IT utilization [7].

Research by Kearns and Lederer [8] emphasizes that strategic alignment in public organizations depends on shared understanding and continuous communication between IT and business leaders. When both sides actively participate in strategic planning and decision-making, IT becomes not only a support function but also a strategic enabler of innovation and policy execution. Therefore, fostering alignment requires a strong partnership between IT managers and policymakers, supported by measurable performance indicators and governance structures.

2.3 Luftman's Strategic Alignment Maturity Model (SAMM)

To assess and improve the level of alignment between IT and business strategy, Luftman (2000) developed the Strategic Alignment Maturity Model (SAMM) [3]. The model identifies six key dimensions that collectively determine the maturity level of IT-business alignment:

1. Communication – The effectiveness of information exchange and mutual understanding between IT and business units.
2. Competency/Value Measurement – The ability to measure IT performance and its contribution to organizational value.
3. Governance – The presence of joint decision-making mechanisms and accountability structures for IT and business strategies.
4. Partnership – The strength of collaboration and mutual trust between IT and business leaders.
5. Technology Scope – The extent to which IT supports both operational and strategic objectives through innovation.
6. Skills – The capability of human resources to adapt and leverage IT for strategic advantage.

Each dimension is evaluated on a five-level maturity scale: Initial/Ad hoc (Level 1), Committed Process (Level 2), Established Focused Process (Level 3), Improved / Managed Process (Level 4), and Optimized Process (Level 5). This structured approach allows organizations to identify strengths and weaknesses in IT-business alignment and to prioritize improvement efforts systematically [9].

2.4 Application of Luftman's Model in Government Context

Several studies have applied Luftman's SAMM in public sector organizations to evaluate the maturity of IT-business alignment. For example, Nfuka and Rusu [10] analyzed IT alignment in Tanzanian government institutions and found that most agencies achieved only moderate alignment levels, primarily due to limited governance and communication mechanisms. Similarly, studies in Asian government settings highlight that while IT systems enhance efficiency, strategic alignment remains constrained by rigid administrative structures and lack of competency measurement frameworks [11].

The adoption of SAMM provides government institutions with a diagnostic tool to evaluate the current alignment state and identify specific areas requiring improvement. In the context of personnel management systems, the model is particularly relevant, as it helps assess

how effectively IT supports human resource planning, data management, and policy implementation. Through systematic evaluation across the six dimensions, agencies can better understand how IT contributes to achieving institutional goals and how strategic collaboration between IT and HR divisions can be strengthened.

2.5 Research Gap

Although numerous studies have examined IT-business alignment in corporate sectors, there remains a limited number of empirical studies focusing on government personnel management systems. Existing research primarily addresses IT governance and service delivery but rarely explores how alignment maturity affects human resource management and organizational performance in public agencies. Therefore, this study fills a crucial gap by applying Luftman's SAMM framework to assess IT-business alignment in a government personnel management system, offering insights into maturity levels, challenges, and strategies for improvement.

Research Methodology

3.1 Research Design

This study adopts a quantitative descriptive approach using the Luftman Strategic Alignment Maturity Model (SAMM) as the main framework for assessing the level of alignment between information technology (IT) and business strategies in a government agency's personnel management system. The quantitative method was chosen because it allows for the systematic measurement of alignment maturity across multiple dimensions and the identification of improvement priorities [3].

The research was conducted in a government institution responsible for managing civil service and human resource operations. The *Personnel Management System (SIMPEG)* was selected as the object of analysis because it represents a core digital system that integrates employee data, administrative processes, and organizational decision-making.

3.2 Population and Sample

The population of this study includes key personnel involved in both IT and human resource management functions within the government agency. Respondents were selected through purposive sampling, focusing on individuals directly engaged in the use, development, or governance of the SIMPEG system. A total of 30 respondents participated, consisting of IT managers, HR officers, and policy-level officials. This sampling approach ensures that responses reflect diverse perspectives across both strategic and operational levels [8].

3.3 Data Collection Techniques

Data were collected through two main instruments:

1. Questionnaires – Structured questionnaires were developed based on Luftman's six alignment dimensions: communication, competency/value measurement, governance, partnership, technology scope, and skills [9]. Each question used a Likert scale ranging from 1 (very low) to 5 (very high) to measure the perceived maturity level for each indicator.
2. Interviews – Semi-structured interviews were conducted with selected respondents to validate questionnaire results and obtain qualitative insights about IT-business collaboration, organizational challenges, and alignment initiatives.

All instruments were pre-tested to ensure validity and reliability before full deployment. The reliability coefficient (Cronbach's alpha) exceeded 0.7, indicating acceptable internal consistency.

3.4 Data Analysis Procedures

The analysis followed Luftman's five-level maturity framework:

- Level 1 – Initial/Ad hoc Process
- Level 2 – Committed Process
- Level 3 – Established Focused Process
- Level 4 – Improved/Managed Process
- Level 5 – Optimized Proces

Each dimension's mean score was calculated, and the overall maturity level was determined by averaging the six dimension scores. The resulting values were then mapped to Luftman's maturity levels to classify the organization's current state of IT-business alignment [1].

Additionally, gap analysis was performed to identify the variance between the current and desired alignment levels. This analysis provided a basis for recommending strategic initiatives aimed at improving alignment maturity. Qualitative data from interviews were also analyzed thematically to complement the quantitative findings and provide deeper contextual understanding.

3.5 Research Framework

The conceptual framework of this study, shown in Fig. 1, illustrates the relationship between the Luftman SAMM dimensions and the IT-business alignment maturity outcomes. The framework assumes that improvements across the six dimensions—communication, competency/value measurement, governance, partnership, technology scope, and skills—collectively enhance alignment maturity and, consequently, organizational performance.

Fig. 1. Luftman's Strategic Alignment Maturity Model (SAMM).

This integrated framework enables the systematic evaluation of how IT strategy supports business objectives within the government agency's personnel management system, providing a foundation for developing targeted improvement strategies.

Results

4.1 Overview of Respondent Profile

A total of **30 respondents** participated in this study, representing various organizational roles within the government agency. The sample consisted of **IT division personnel (30%)**, **HR management staff (40%)**, and **policy-level officials (30%)**. Most respondents had over

five years of experience in their respective fields, ensuring sufficient familiarity with both the business and technological aspects of the *Personnel Management System (SIMPEG)*.

This diverse composition provided a comprehensive view of how technology and business strategies are integrated across multiple organizational layers.

4.2 Alignment Assessment Based on Luftman's Dimensions

Using Luftman's Strategic Alignment Maturity Model (SAMM), the analysis measured six dimensions: communication, competency/value measurement, governance, partnership, technology scope, and skills. The results of the quantitative analysis are presented in Table 1.

Table 1. IT-Business Alignment Maturity Levels by Dimension

Dimension	Mean Score	Maturity Level	Description
Communication	3.2	Level 3	Moderate communication and mutual understanding between IT and HR divisions
Competency / Value Measurement	2.9	Level 2–3	Limited evaluation of IT's contribution to organizational performance
Governance	3.1	Level 3	IT and HR decisions partially aligned with institutional policies
Partnership	3.0	Level 3	Collaboration exists but lacks strategic coordination
Technology Scope	3.4	Level 3	IT infrastructure supports HR processes effectively
Skills	3.3	Level 3	Adequate technical and managerial skills, though unevenly distributed

The overall average maturity score was 3.15, corresponding to Level 3 (Established Focused Process) in Luftman's framework. This indicates that the organization has established a structured and consistent relationship between IT and business functions, but still lacks comprehensive strategic integration.

4.3 Interpretation of Findings

The findings demonstrate that IT and business strategies within the personnel management system are moderately aligned. Communication between departments is relatively effective, especially in operational problem-solving and system implementation discussions. However, strategic communication—particularly in long-term planning and policy synchronization—remains limited.

The competency and value measurement dimension scored the lowest (2.9), implying the absence of systematic mechanisms to measure IT's value contribution to human resource efficiency or policy effectiveness. This gap reflects a broader challenge in many public-sector institutions, where performance metrics are not yet fully integrated with digital transformation outcomes [1].

In contrast, technology scope showed the highest alignment level (3.4), suggesting that technological resources are well-suited for current operational demands. The personnel management system (SIMPEG) successfully facilitates data management, attendance tracking, and HR reporting processes. Nevertheless, technological utilization remains reactive rather than proactive, indicating potential for enhancement through advanced analytics and strategic planning integration [2].

4.4 Comparative Discussion with Previous Studies

The findings align with prior research by Luftman et al. [3] and Chan & Reich [1], who observed that public institutions often achieve alignment maturity levels between 2 and 3 due to structural rigidity and policy-driven decision-making. These limitations hinder dynamic collaboration between IT and business units.

Similarly, a study by Kearns and Lederer [8] emphasized that achieving higher alignment levels requires leadership commitment, joint governance structures, and measurable performance indicators linking IT outcomes to organizational goals. The current results reinforce this view—while operational synergy exists, strategic coordination remains underdeveloped.

4.5 Recommendations for Improvement

To achieve higher alignment maturity (Level 4 or 5), the following recommendations are proposed:

1. Strengthen Strategic Communication: Establish formal communication channels between IT and HR leaders through joint planning meetings, strategic workshops, and performance reviews.
2. Enhance IT Value Measurement: Implement key performance indicators (KPIs) that directly link IT system performance with HR productivity and service delivery metrics.
3. Develop Integrated Governance: Form cross-functional governance committees to oversee technology investments and policy alignment in personnel management.
4. Invest in Human Capital: Provide targeted training in digital transformation, data analytics, and IT governance for both IT and HR staff to bridge skill disparities.
5. Adopt Proactive Technology Strategies: Move from reactive system maintenance to proactive innovation through predictive analytics, cloud-based HR platforms, and AI-driven decision support.

These initiatives would support a gradual shift toward strategic alignment optimization, enabling IT to not only support but actively shape the agency's human resource management strategies.

Conclusion

The results of this study reveal that the alignment between information technology (IT) and business strategies in the Government Agency Personnel Management System has reached a moderate maturity level (Level 3) based on Luftman's Strategic Alignment Maturity Model (SAMM). This indicates that the agency has established structured processes for collaboration between IT and business divisions, yet strategic integration and performance measurement mechanisms remain limited.

Among the six dimensions assessed—communication, competency/value measurement, governance, partnership, technology scope, and skills—the **technology scope** dimension scored the highest, showing that IT infrastructure effectively supports operational processes within the personnel management system (*SIMPEG*). Conversely, **competency/value measurement** received the lowest score, highlighting the absence of systematic evaluation methods to measure IT's contribution to organizational performance. These findings align with prior

studies that identify strategic communication and performance measurement as common challenges in achieving higher levels of IT-business alignment in the public sector.

To strengthen alignment maturity, this research recommends several key actions:

1. **Institutionalizing Strategic Communication** between IT and business leaders to ensure synchronization of objectives and policies.
2. **Developing Integrated Governance Mechanisms** that link IT initiatives with human resource strategies and agency-wide performance targets.
3. **Implementing Value-Based IT Measurement** systems to evaluate IT's tangible impact on service quality and efficiency.
4. **Investing in Capacity Building** to enhance digital competencies and leadership awareness across departments.

By implementing these strategies, government agencies can move toward higher alignment maturity (Levels 4 and 5), where IT not only supports but actively drives institutional transformation and innovation in public service management.

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