

# Healthcare IT Strategic Alignment: Challenges and Recommendations

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**Abstract.** Information technology (IT) has dramatically transformed business processes in many industries including healthcare, where electronic health records, electronic prescribing and computerized provider order entry systems have positively changed the practice of healthcare. Recently, King Faisal Specialist Hospital and Research Center, Saudi Arabia, implemented various IT systems in multiple clinical and administrative departments leading to major transformation in healthcare workflows and business processes. At the pharmacy department, many Healthcare-IT alignment challenges are still perceived. Information about challenges of strategic alignment were gathered using qualitative survey methods, through conducting semi-structures interviews, to collect opinions, experiences and suggestions. Findings were first validated, according to published literature and research work, then sorted into fourteen challenges categorized into four main areas and recommended solutions: 1) Improving organizational communication, 2) Enhancing organizational governance, 3) Specifying the alignment scope and building the architecture and 4) Developing organizational and human skills.

**Keywords.** Healthcare, Information Technology, Strategic Alignment, Hospitals.

## 1. Introduction

Information technology (IT) has dramatically transformed business processes in many industries, including healthcare, where electronic health records, electronic prescribing and computerized provider order entry have positively changed the practice of healthcare [1]. The huge influx of healthcare data that need to be shared between various providers in a timely manner adds pressures to adopt IT solutions that would assist in providing safe and effective healthcare services in an efficient way. Therefore, reaching a high level of strategic alignment between IT and business will have significant impact on the performance of organizations, provide new opportunities for improvement, gain return on investment in IT application and achieve a competitive advantage [2]. Strategic IT-business alignment can be defined as fitting or integrating the IT and business strategies together. It can also be defined as the integration of external and internal domains. The external domain includes the main characteristics of the business that makes it unique among different competitors and the internal domain

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includes the services or products that are produced by the business [3]. There are various models and frameworks that are used to provide a practical guidance to measure the IT-business alignment. One model proposed by Henderson and Venkatraman (1993) measures two types of integration: the strategic integration between IT and business and the functional integration concerned with various business and IT processes and links it to the infrastructure [3]. Another model developed by Luftman (2003) focuses on the relationship between the business and IT through measuring six main alignment criteria: communication, competency, governance, partnership, scope, and skills [4]. Successful IT-business alignment provides organizations with the stability and flexibility to adapt to environment dynamics [5]. Recently, King Faisal Specialist Hospital and Research Center, Saudi Arabia, implemented various IT systems in multiple clinical and administrative departments that lead to major transformation in the workflow and processes. At the pharmacy department, many challenges are still perceived, so we decided to explore these challenges and provide recommendations to assist decision makers in closing the gaps between business and IT to improve healthcare performance.

**2. Methods and Results**

Detailed information about perceived challenges aligning Pharmacy and IT processes were gathered from the two departments, the services and staff members. Qualitative survey methods were used, through conducting semi-structures interviews, to collect opinions, experiences and suggestions. Findings of interviews were first validated, according to published literature and research work, then sorted by researchers into fourteen challenges, categorized into four main areas and recommended solutions. Figure 1 shows the four main areas of challenges and Table 1 lists the detailed fourteen challenges within the four areas.

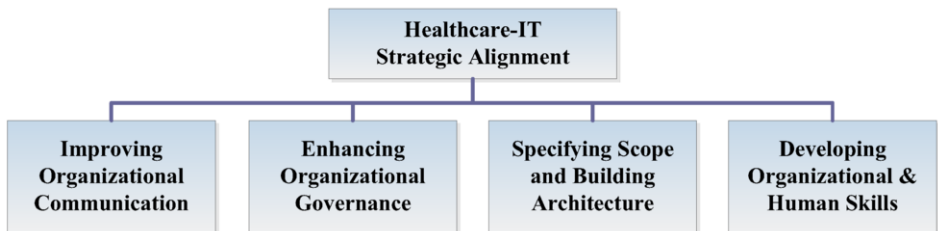


Figure 1. Healthcare IT Strategic Alignment Four Challenge Areas

**3. Results and Discussion**

*3.1. Improving Organizational Communication*

Study participants agreed that business and IT sides should have a proper level of communication through which both parties can understand each other, using common language, and where knowledge sharing is practiced within the organization. Many studies report that within different organizations there are gaps in communication that requires being addressed [6,7]. The main challenges that could be identified and

validated within communication includes 1) Partnership between departments and overcoming differences of views, due to different and sometimes conflicting priorities, 2) Mutual understanding of the roles of other departments, where each department might understand their role clearly but either do not understand the role of other departments or the role of their own departments in supporting other departments, 3) Sufficient knowledge sharing though different media, such as e-mails, meetings, and announcements to avoid miscommunication and 4) Availability and effectiveness of IT-business liaison to coordinate communication and tasks between departments [8].

**Table 1.** Healthcare IT Strategic Alignment 4 Areas and Summary of the 14 Perceived Challenges.

Areas	Challenges
Organizational Communication	Interdepartmental partnership
	Mutual understanding
	Sufficient knowledge sharing
	Availability and effectiveness of IT-business liaison
Organizational Governance	Involvement in strategic planning
	Involvement in executive committees
	Availability of a structured reporting hierarchy
	Authorization for decision making and understanding the role
Alignment Scope and Architecture	Availability of criteria to prioritize IT projects
	Automating business processes
Organizational and Human skills	IT solutions effectiveness/customization
	Readiness to face changes
	Management style
	Learning from previous experiences

### 3.2. Enhancing Organizational Governance

Organizational governance is based on achieving a certain level of authority for decision making, where managers from all contributing departments should be involved. It also includes having a clear process for prioritizing IT projects and utilizing resources in an effective way [9]. Based on our findings and validation, organizational governance includes five main challenges: 1) Involvement of all departments in strategic planning, 2) Involvement of departments in steering executive committees managing projects, 3) Availability of a structured hierarchy to report achievements and escalate challenges and, 4) Authorization to provide decision making in IT projects selection and understanding of the role or position in decision making and 5) Availability of criteria that prioritize IT projects based on the actual needs of processes and patients [10].

### 3.3. Specifying Alignment Scope and Building the Architecture

The IT department should be able to support the businesses in their requirements through providing effective IT solutions that are customized to their needs. IT should also provide a supportive infrastructure for implementing IT solutions that facilitate business processes [11]. Findings show that scope and architecture can be evaluated through analyzing two main challenges: 1) Level and degree of automating business processes, which performance is influenced by, then 2) IT solutions effectiveness and customization, in the form of influence on outcomes and results [12].

### 3.4. Developing Organizational and Human skills

Skills can be defined as the ability of the organization and personnel to accept changes and adopt cultures that promote readiness to face expected and unexpected changes. It also includes the presence of a formal management style within the departments which encourage learning from previous experiences [13]. Based on findings, development of skills is based on three main challenges: 1) Readiness to face expected and unexpected changes, 2) The management style that promote change acceptance and readiness and 3) Learning from previous experiences [14].

## 4. Conclusion

Strategic alignment between business and IT is important for improving organizational performance and achieving competitive advantage within any given industry. In a highly dynamic environment, such as healthcare, it is crucial to have a balanced fit between the business and IT processes and strategies to support changes and modify strategic planning; this could minimize negative effects of change and improve effectiveness and efficiency of performance.

## References

- [1] B. Chaudhry, J. Wang, S. Wu, M. Maglione, W. Mojica, E. Roth, P.G. Shekelle, Systematic review: impact of health information technology on quality, efficiency, and costs of medical care, *Annals of internal medicine* **144**(10) (2006), 742-752.
- [2] E. Iveroth, P. Fryk, B. Rapp, Information technology strategy and alignment issues in health care organizations, *Health care management review* **38**(3) (2013), 188-200.
- [3] J.C. Henderson, H. Venkatraman, Strategic alignment: Leveraging information technology for transforming organizations, *IBM systems journal* **32**(1) (1993), 472-484.
- [4] J. Luftman, Assessing IT/business alignment, *Information Systems Management* **20**(4) (2003), 9-15.
- [5] P.P. Tallon, A. Pinsonneault, Competing perspectives on the link between strategic information technology alignment and organizational agility: insights from a mediation model, *Mis Quarterly* (2011), 463-486.
- [6] N.B. Kurniawan, Enterprise Architecture design for ensuring strategic business IT alignment (integrating SAMM with TOGAF 9.1). In *Rural Information & Communication Technology and Electric-Vehicle Technology (rICT & ICeV-T)*, IEEE Joint International Conference, 2013, 1-7.
- [7] J. Luftman, Assessing business-IT alignment maturity, *Strategies for information technology governance* **4** (2004), 99.
- [8] K. Luxford, D.G. Safran, T. Delbanco, Promoting patient-centered care: a qualitative study of facilitators and barriers in healthcare organizations with a reputation for improving the patient experience, *International Journal for Quality in Health Care* **23**(5) (2011), 510-515.
- [9] A. Cassidy, *A practical guide to information systems strategic planning*, CRC press, 2016.
- [10] J.M. Bryson, *Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organizational achievement*, John Wiley & Sons, 2018.
- [11] J. Orozco, A. Tarhini, T. Tarhini, A framework of IS/business alignment management practices to improve the design of IT Governance architectures, *International Journal of Business and Management* **10**(4) (2015), 1.
- [12] N. Venkatraman, 14 IT-enabled Business Transformation: From Automation to Business Scope Redefinition, *Operations management: a strategic approach* **145** (2005).
- [13] D. Sledgianowski, J. Luftman, IT-business strategic alignment maturity: A case study, *Journal of Cases on Information Technology (JCIT)* **7**(2) (2005), 102-120.
- [14] J. Luftman, J. Dorociak, R. Kempaiah, E.H. Rigoni, Strategic alignment maturity: a structural equation model validation, *AMCIS 2008 Proceedings* **53** (2008).